

## FLORA OF THE STANSBURY MOUNTAINS, UTAH

Alan C. Taye<sup>1</sup>

**ABSTRACT.**— The Stansbury Mountains of north central Utah rise over 2000 m above surrounding desert valleys to a maximum elevation of 3362 m on Deseret Peak. Because of the great variety of environmental conditions that can be found in the Stansburys, a wide range of plant species and vegetation types (from shadscale desert to alpine meadow) exist there. This paper presents an annotated list of 594 vascular plant species in 315 genera and 78 families. The largest families are Asteraceae (98 species), Poaceae (71), Brassicaceae (33), Fabaceae (27), and Rosaceae (26). *Elymus flavescens* was previously unreported from Utah. Statistical comparison of the Stansbury flora with neighboring mountain floras indicates that the Wasatch Mountains lying 65 km to the east have probably been the primary source area for development of the Stansbury flora. Many lowland species, especially those inhabiting sandy areas, apparently have migrated to the area from the south.

The high mountain ranges of the Great Basin are botanically interesting for their isolated montane floras. Surrounded by desert, these islandlike ranges have characteristics in common with oceanic islands (Harper et al. 1978). One of these ranges, the Stansbury Mountains of north central Utah, is particularly interesting in supporting a vegetational zonation and flora that are transitional between the Great Basin ranges and the Wasatch Mountains.

### GEOGRAPHY AND GEOLOGY

The Stansbury Mountains of Tooele County, Utah, situated near the eastern edge of the Great Basin about 65 km west of Salt Lake City and the Wasatch Front, are located between 40° 20' and 40° 45' N latitude and 112° 29' and 112° 44' W longitude. The range is bounded on the west by Skull Valley, on the east by Tooele and Rush valleys, on the north by the Great Salt Lake and Stansbury Island, and on the south by the Onaqui Mountains. The range has a length of 45 km and a width of 21 km at its widest point, and occupies an area of about 909 km<sup>2</sup>. The elevation ranges from 1280 m (4200 ft) in the valleys to 3362 m (11,031 ft) at the summit of Deseret Peak.

Structurally, the Stansbury Mountains are a "gigantic eastward tilted fault block" (Rigby 1958). The western escarpment rises abruptly from the floor of Skull Valley and is

dissected by steep-walled canyons. The eastern side of the range is generally less rugged except in the vicinity of Deseret Peak, where Pleistocene glacial activity has produced sheer canyon walls and several well-defined horns formed from coalescing glacial cirques. At least 17 cirque basins, two of which contain small lakes, occur in the range. Skirting the base of the range are terraces, wave-cut cliffs, spits, and other features produced by Lake Bonneville. Pediment surfaces, bajadas, and alluvial fans are present on the western and eastern edges of the range (Rigby 1958).

The core of the range is composed of the Cambrian Tintic Quartzite. Younger Paleozoic sedimentary strata, which overlay and flank the quartzite throughout the range where not eroded away, compose the bulk of the northern and southern portions of the range. Lesser amounts of sedimentary and igneous formations of Tertiary age are also present as are Quaternary glacial, aeolian, and lacustrine deposits (Rigby 1958).

### CLIMATE AND SOILS

The climate for the area is classified as cold semiarid or steppe by Trewartha (1968). The city of Tooele, located 16 km to the east of the Stansburys at an elevation of 1545 m (5070 ft), has average January and July temperatures of -1.7 C and 24.7 C, respectively, with an average annual temperature of 10.6 C. The high and low temperatures at Tooele

<sup>1</sup>U.S. Army Intelligence Center and School, Fort Huachuca, Arizona 85613.

for 1979 were 35.6 C and -22.2 C (U.S. Department of Commerce 1980). Temperature data are not available for the higher portions of the range.

Precipitation in the Great Basin is strongly influenced by the orographic effect, with mountains receiving greater amounts than the valleys (Houghton 1969). Tooele receives an average annual precipitation of 41.43 cm, with the largest amounts falling in the months of March (4.67 cm), April (5.59 cm), and May (4.16 cm). The driest months are July (1.78 cm), August (2.36 cm), and September (1.83 cm) (U.S. Department of Commerce 1980). A precipitation station located at 2820 m (9250 ft) on the lee side of Deseret Peak received an average of 140.28 cm (more than three times the valley station average) over the three-year period from 1974 to 1976 (Soil Conservation Service 1979).

Soils are diverse in the study area. The Entisol, Aridisol, and Mollisol soil orders and six soil associations have been mapped in the Stansburys by the Soil Conservation Service (1973). Types of soils range from the strongly alkaline, light-colored soil typical of the valley greasewood community to the strongly acidic, dark-colored soil of the montane spruce-fir community (Wilson et al. 1975).

#### VEGETATION

Eight somewhat distinct vegetation zones or communities, discussed by Billings (1951) and N. Holmgren (1972), are present in the Stansbury Mountains. In order of increasing elevation, they are the shadscale, sagebrush-grass, juniper-pinyon, Douglas fir-white fir, upper sagebrush-grass, Engelmann spruce-subalpine fir, limber pine-bristlecone pine, and alpine zone.

The vegetational zonation in the Stansbury Mountains is transitional between the Wasatch type and the Basin Range type (Billings 1951). Gambel oak (*Quercus gambelii*), a dominant species in the central and southern Wasatch Mountains, and common on the opposite side of Tooele Valley in the Oquirrh Mountains, is conspicuously absent from the Stansburys. The oak habitat is dominated instead by a well-developed Utah juniper (*Juniperus osteosperma*) woodland. Blue spruce (*Picea pungens*), a component of the Douglas

fir-white fir-blue spruce zone in the Wasatch range (N. Holmgren 1972), is also apparently absent from the Stansburys. Bristlecone pine (*Pinus longaeva*) is a major component of the Great Basin subalpine conifer community (Billings 1951, N. Holmgren 1972), and its presence in the Stansburys marks its northern and eastern limits of distribution in the Bonneville Basin.

#### BOTANICAL EXPLORATION

Captain Howard Stansbury, for whom the mountains and island are named, collected the types of *Cowania mexicana* var. *stansburiana*, *Heuchera rubescens*, and *Perityle stansburii* from nearby Stansbury Island in 1850 (Stansbury 1852). Marcus E. Jones made the first known collections from the Stansbury Mountains in 1891 and 1903 (Jones 1965) and collected the type for *Phacelia incana* from nearby Dugway Valley (Welsh 1982). T. H. Kearney et al. (1914) prepared extensive species lists for the plant communities of Tooele Valley in their study on the relationship of vegetation to soil moisture and salt content. One new species, *Eriogonum kearneyi*, was discovered (Tidestrom 1913). S. Flowers collected in the range in 1928 and 1930, and B. Maguire visited there in 1943. M. E. Lewis (pers. comm. 1979) prepared a preliminary species list (with 150 species) for the Stansburys in 1957.

In the past two decades a number of botanists have collected in the Stansbury Mountains, including B. Albee, L. C. Anderson, M. E. Barkworth, E. M. Christensen, W. P. Cottam, K. T. Harper, A. H. Holmgren, R. Kass, R. M. Lanner, E. Neese, K. H. Thorne, R. K. Vickory, Jr., and S. L. Welsh. Their collections have contributed to this checklist. For this study, I visited the range from 1978 to 1981 and made over 1400 collections.

#### DISCUSSION OF THE FLORA

The diversity of climatic and edaphic habitats in the Stansbury Mountains is reflected in the large number of plant species occurring in this range. A total of 594 species from 315 genera and 78 families are listed following this discussion. Of this number, 494 species from 264 genera and 71 families are presumably native to the range. Though

occupying only 0.43 percent of Utah's land area, the Stansbury range has 19.2 percent of the state's 2575 native species (from Welsh et al. 1981). A statistical summary of the flora is presented in Table 1.

The number of montane species expected to occur above 2286 m (7500 ft) in elevation on Great Basin mountain ranges can be predicted from the species-area equation in Harper et al. (1978). With an area of 140 km<sup>2</sup> above 2286 m (Behle 1978), the Stansbury Mountains would be expected to have 225 montane species. The number I found was 385. The unexpectedly high number of species is probably due to the presence of an alpine zone on this relatively narrow mountain range. Environmental heterogeneity and favorability are more important than area in the determination of floral diversity (Harper et al. 1978).

Statistical comparison of 11 mountain floras (listed in Table 2) in the eastern Great Basin (Taye 1981) shows the Stansbury flora to be most similar to the floras of Mount

Timpanogos, northern Wasatch, and central Wasatch—62.0, 61.2, and 60.8 percent similarity, respectively, using Sørensen's index of similarity (Fig. 1). Thus the Wasatch range is perhaps the primary source area for development of the Stansbury flora. This might be expected because of the close proximity (65 km) of the Stansbury Mountains to the floristically rich Wasatch Mountains and of the finding by Harper et al. (1978) that Great Basin mountains are dominated by species from the Rocky Mountain floristic element. The floristic relationship between the Wasatch and Stansbury ranges is also evident from the several montane species found in both ranges but not known to occur west of the Stansburys (Table 3).

Though the Stansbury Mountains and central Wasatch Mountains rise to comparable heights (Table 2), the Stansbury flora has considerably fewer alpine species. Apparently missing are *Polygonum viviparum*, *Salix arctica*, *Silene acaulis*, *Smelowskia calycina*, and many others. Persistent snowdrifts, conducive

TABLE 1. Statistical summary of the vascular plants of the Stansbury Mountains.

	Indigenous			Introduced		
	Families	Genera	Species	Families	Genera	Species
Lycopodiophyta	1	1	1	0	0	0
Equisetophyta	1	1	3	0	0	0
Polypodiophyta	1	4	4	0	0	0
Pinophyta	2	5	10	0	0	3
Magnoliophyta						
Magnoliopsida	56	204	382	7	43	70
Liliopsida	10	49	94	0	8	27
Totals:	71	264	494	7	51	100

Grand totals:

Families	78
Genera	315
Species	594

Largest families (native + introduced species)

Asteraceae	87 + 11	Scrophulariaceae	19 + 3
Poaceae	44 + 27	Boraginaceae	17 + 2
Rosaceae	24 + 2	Polygonaceae	16 + 1
Cyperaceae	22 + 0	Apiaceae	15 + 1
Fabaceae	21 + 6	Chenopodiaceae	15 + 9
Brassicaceae	20 + 13	Onagraceae	15 + 0

Largest genera (native + introduced species)

<i>Carex</i>	17 + 0	<i>Artemisia</i>	7 + 0
<i>Astragalus</i>	12 + 0	<i>Cryptantha</i>	7 + 0
<i>Eriogonum</i>	10 + 0	<i>Poa</i>	7 + 4
<i>Erigeron</i>	8 + 0	<i>Ribes</i>	7 + 0



to the growth of many alpine species (Billings 1978), are present throughout the summer but they are few and small in size. Altithermal extinctions (Billings 1978), limited alpine habitat, or failure to reach the Stansburys are possible explanations for their absence there. A list of species occurring above 3050 m (10,000 ft) in elevation is presented in Table 4. Timberline is generally located from 3200 m (10,500 ft) to 3290 m (10,800 ft), but the south slope of Deseret Peak is nearly treeless to an elevation of 2865 m (9400 ft).

The influence of the Great Basin floristic division (N. Holmgren 1972) on the Stansbury flora is seen in the presence of many of the valley and foothill species. Most of these desert species have apparently migrated northward from the Mojave Desert during the warmer postglacial period of the last 10,000 years (Reveal 1979, Wells 1980), and many of them apparently reach their northern or eastern limit of distribution in the study area (Table 3). The Stansbury flora, in comparison with the flora of the more mesic Wasatch Mountains, has a greater number of species from many characteristically desert genera including *Astragalus*, *Camissonia*, *Cryptantha*, *Eriogonum*, *Phacelia*, and *Tetradymia*. A number of species from these and other genera are partially or wholly restricted to sandy areas at the base of the range (Table 5).

Plant migration to the Stansbury Mountains from northern and western routes has probably been extremely limited because of past and present barriers in the Bonneville

Basin. Lake Bonneville, a large freshwater lake which occupied most of northwestern Utah during the Pleistocene (Morrison 1965), and the present Great Salt Lake–Great Salt Lake Desert have undoubtedly restricted the migration of most plant species. One species that appears to have reached the Stansburys from the north is *Elymus flavescens*, a species disjunct from the Snake River Plains of Idaho (Cronquist et al. 1977) and previously unreported from the state of Utah.

The impact of humans on the Stansbury flora can be seen by the large number (100) of cultivated or adventive species. Most of these species are limited to low elevations where even the vegetation has been markedly altered in some areas. Especially common are *Agropyron cristatum*, *Bromus tectorum*, *Halogeton glomeratus*, and *Salsola iberica*. Only a few introduced species such as *Dactylis glomerata*, *Poa pratensis*, and *Taraxacum officinale* are present at elevations greater than 2400 m (7874 ft).

None of the species are endemic to the study area, though several are restricted to somewhat larger areas. *Astragalus eurekensis* is endemic to central Utah (Welsh 1978b); *Astragalus lentiginosus* var. *pohlii* is a very narrow endemic of Rush Valley and Skull Valley (Welsh and Barneby 1981); *Eriogonum grayi* is endemic to alpine areas of north central Utah (Reveal 1973); and *Sphaeromeria diversifolia* is apparently restricted to the central and southern Wasatch Mountains and west to the Quinn Canyon Range of Nevada (Holmgren et al. 1976).

TABLE 2. Floras of the eastern Great Basin (after Harper et al. 1978).

	Native + introduced species	Maximum elevation (m)	Source of information
MOUNTAIN ISLANDS			
1 Stansbury Mountains	494 + 100	3362	This report
2 East Tintic Mountains	162 + 48	2505	Nebeker 1975
3 Raft River Mountains	303 + 23	3015	Preece 1950
4 Deep Creek Mountains	569 + 47	3688	McMillan 1948, Welsh 1978a
5 Jarbidge Mountains	478 + 22	3288	Lewis 1975
6 Ruby Mountains	524 + 24	3471	Lewis 1971
7 Wheeler Peak	389 + 23	3981	Lewis 1973
MAINLAND AREAS			
8 Northern Wasatch Mountains	767 + 528	3042	A. Holmgren 1972
9 Central Wasatch Mountains	911 + 228	3502	Arnold et al. 1980
10 Mount Timpanogos	538 + 90	3581	Allred 1975
11 Wasatch Plateau	826 + 86	3440	Lewis 1980



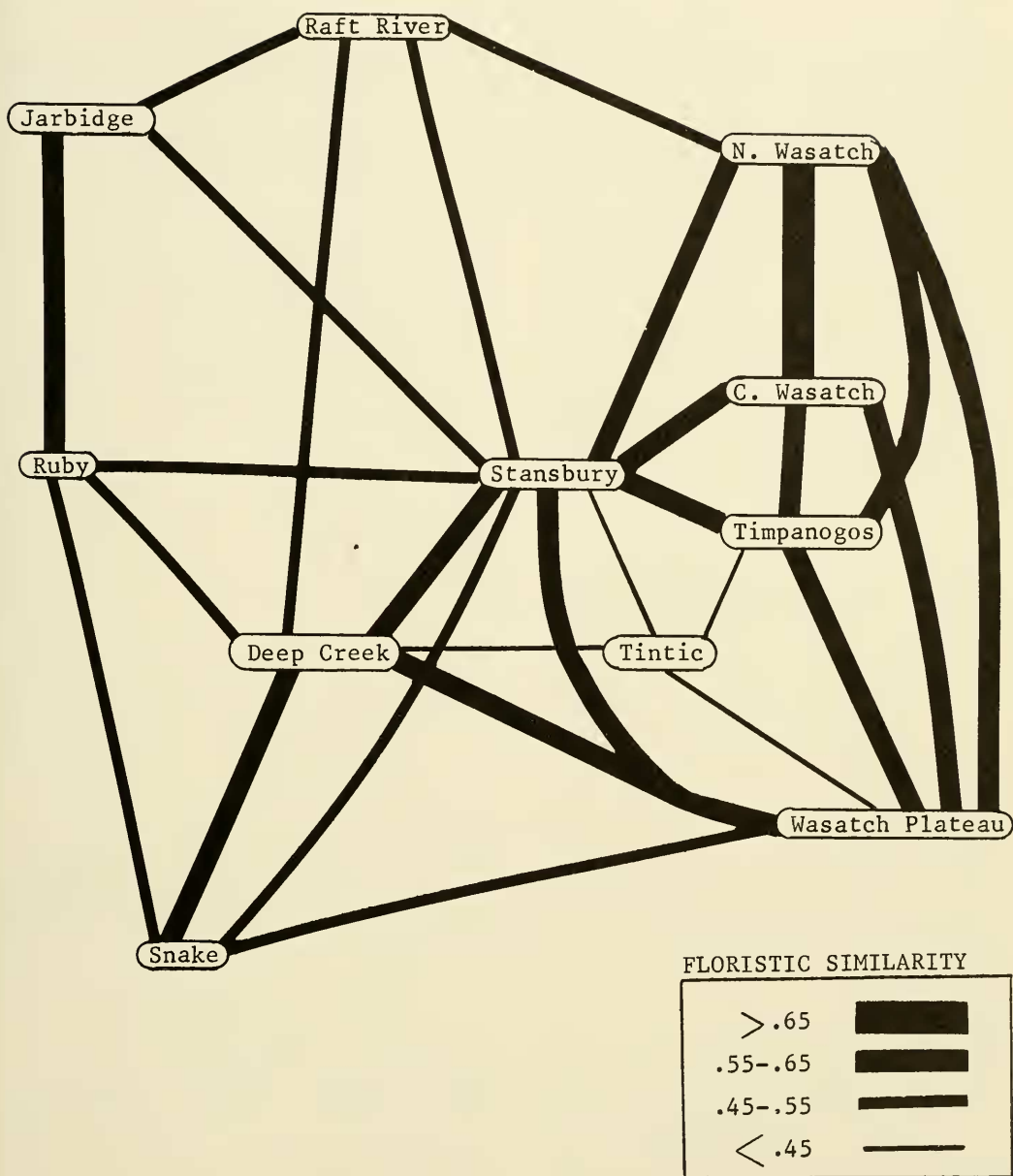


Fig. 1. Plexus diagram of floristic similarities among mountain ranges in the eastern Great Basin. High values correspond to high similarity. Comparisons were made using Sørensen's index of similarity. Data are from Taye (1981).

ACKNOWLEDGMENTS

Many individuals kindly offered assistance during the preparation of this checklist. I am especially grateful to Dr. Stanley L. Welsh, curator of the herbarium of Brigham Young University, for guiding and encouraging the completion of this study. Drs. Kimball T. Harper, Elizabeth Neese, and Samuel R.

Rushforth of Brigham Young University kindly reviewed and commented upon a portion of the manuscript. Assistance with plant identifications and herbarium research was given by Kaye H. Thorne, assistant curator of the Brigham Young University herbarium; Dr. Mary E. Barkworth and Dr. Leila Shultz, director and curator, respectively, of the Intermountain Herbarium at Utah State Uni-

versity; Lois Arnow and Beverly Albee, curator and assistant curator, respectively, of the Garrett Herbarium at the University of Utah; and Sherel Goodrich and Mont E. Lewis of the U.S. Forest Service. Bill Wall of the U.S. Forest Service graciously shared the Stansbury Guard Station with me for three summers and helped collect many of the plant specimens. Special thanks are expressed to Professor Arthur H. Holmgren, retired curator of the Intermountain Herbarium, for his sustained assistance and interest in this study. I also thank Dee Applegate for faithfully typing the manuscript and Mathew Chatterly for preparing the figure. Finally, deep appreciation is expressed to my parents for their love and support throughout the course of this study.

#### ANNOTATED LIST OF VASCULAR PLANTS

The following list of families, genera, and species is arranged in alphabetical order

TABLE 3. Plants with distributional limits in the Stansbury Mountains and vicinity.

Northern limit of distribution	
<i>Astragalus ceramicus</i> (Puddle Valley)	<i>Achillea millefolium</i>
<i>Astragalus eurekaensis</i>	<i>Agropyron trachycaulum</i>
<i>Astragalus mollissimus</i>	<i>Androsace septentrionalis</i>
<i>Ceanothus martinii</i>	<i>Antennaria corymbosa</i>
<i>Cymopterus fendleri</i>	<i>Arabis holboellii</i> var. <i>secunda</i>
<i>Echinocereus triglochidiatus</i> var. <i>melanacanthus</i> (Stansbury Island)	<i>Arenaria kingii</i>
<i>Eriogonum kearneyi</i>	<i>Artemisia tridentata</i> var. <i>caseyana</i>
<i>Eriogonum umbellatum</i> var. <i>subaridum</i>	<i>Astragalus kentrophyta</i> var. <i>implexus</i>
<i>Flaveria campestris</i>	<i>Astragalus tenellus</i>
<i>Geranium parryi</i>	<i>Carex atrata</i> var. <i>erecta</i>
<i>Lycium andersonii</i> (Puddle Valley)	<i>Carex haydeniana</i>
<i>Pinus longaeva</i>	<i>Castilleja applegatei</i> var. <i>viscida</i>
<i>Stephanomeria pauciflora</i>	<i>Castilleja rhexifolia</i>
	<i>Cirsium eatonii</i>
	<i>Cymopterus hendersonii</i>
	<i>Cymopterus longipes</i>
	<i>Cystopteris fragilis</i>
	<i>Draba stenoloba</i>
	<i>Erigeron compositus</i>
	<i>Erigeron eatonii</i>
	<i>Erigeron leiomerus</i>
	<i>Eriogonum grayi</i>
	<i>Eriogonum umbellatum</i> var. <i>desereticum</i>
	<i>Festuca ovina</i> var. <i>brevifolia</i>
	<i>Geum rossii</i> var. <i>turbinatum</i>
	<i>Haplopappus macronema</i>
	<i>Heuchera rubescens</i>
	<i>Ivesia gordonii</i>
	<i>Juniperus communis</i> var. <i>depressa</i>
	<i>Lathyrus lanzwertii</i>
	<i>Lesquerella occidentalis</i> var. <i>cinerascens</i>
	<i>Leucopoa kingii</i>
	<i>Lewisia pygmaea</i>
	<i>Linum perenne</i>
	<i>Lupinus argenteus</i>
	<i>Luzula spicata</i>
	<i>Oxyria digyna</i>
	<i>Penstemon humilis</i>
	<i>Phlox pulcinata</i>
	<i>Poa fendleriana</i>
	<i>Poa secunda</i>
	<i>Potentilla ovina</i>
	<i>Ribes montigenum</i>
	<i>Saxifraga rhomboidea</i>
	<i>Sedum lanceolatum</i>
	<i>Selaginella watsonii</i>
	<i>Senecio fremontii</i>
	<i>Senecio streptanthifolius</i>
	<i>Sitanion hystrix</i>
	<i>Solidago parryi</i>
	<i>Swertia radiata</i>
	<i>Symphoricarpos oreophilus</i>
	<i>Synthyris pinnatifida</i>
	<i>Thlaspi montanum</i>
	<i>Trisetum spicatum</i>
	<i>Valeriana acutiloba</i> var. <i>pubicarpa</i>
	<i>Zigadenus elegans</i>
Eastern limit of distribution	
<i>Chamaebatiaria millefolium</i> (Oquirrh Mtns.)	
<i>Erigeron argentatus</i>	
<i>Euphorbia ocellata</i> var. <i>arenicola</i>	
<i>Ribes velutinum</i> var. <i>velutinum</i> (Oquirrh Mtns.)	
Southern limit of distribution	
<i>Elymus flavescens</i>	
Western limit of distribution	
<i>Castilleja applegatei</i> var. <i>viscida</i>	
<i>Eriogonum grayi</i>	
<i>Geranium parryi</i>	
<i>Mertensia arizonica</i> var. <i>leonardii</i>	
<i>Mertensia brevistyla</i>	

within the divisions of Cronquist et al. (1972). Nomenclature generally follows that of Welsh et al. (1981). Volumes 1 and 6 of the

TABLE 4. Nonarborescent species occurring above 3050 m in elevation in the Stansbury Mountains.

Intermountain Flora (Cronquist et al. 1972, 1977) were used for the nomenclature of the vascular cryptogams, gymnosperms, and monocots. Other helpful sources were Arnov et al. (1980), Hitchcock and Cronquist (1973), Welsh (1978b), Welsh and Moore (1973), and Welsh and Reveal (1977). Synonyms are not listed unless in recent use. Introduced species are preceded by an asterisk (\*). A representative collection number (my own unless otherwise noted) is cited for each species, and all specimens cited are deposited in the herbarium at Brigham Young University (BRY) unless otherwise indicated. A number of specimens are deposited in the Garrett Herbarium at the University of Utah (UT) and/or the Intermountain Herbarium at Utah State University (UTC). Frequency of most species is estimated based on the following scale from Thorne (1967): rare, 1 to 3 collections or observation stations; infrequent, 4 to 7 stations; frequent, 8 to 12 stations; common, more than 12 stations. This list should not be considered complete since many additional species remain to be discovered.

DIVISION LYCOPODIOPHYTA

Selaginellaceae

*Selaginella watsonii* Underw. Watson Spikemoss. Frequent; open rocky slopes at high elevations. 507.

DIVISION EQUISETOPHYTA

Equisetaceae

*Equisetum arvense* L. Field Horsetail. Rare; streamside in North Willow Canyon. 437.

*Equisetum hyemale* L. Common Scouring Rush. Frequent; streamside at low and middle elevations. 311 (UT).

*Equisetum laevigatum* A. Br. Smooth Scouring Rush. Frequent; streamside at low elevations. 850.

DIVISION POLYPODIOPHYTA

Polypodiaceae

*Cystopteris fragilis* (L.) Bernh. Brittle Bladder Fern. Common; shaded and open mesic sites from middle elevations to alpine. 943.

*Pellaea breweri* D. C. Eat. Brewer Cliff-brake. Rare; limestone outcrops at middle elevations. 649.

*Polystichum lonchitis* (L.) Roth. Mountain Holly Fern. Rare; base of quartzite cliff in Douglas fir community. Taye & Herrick 1441.

*Woodsia oregana* D. C. Eat. Oregon Woodsia. Rare; dry, rocky slopes in juniper zone. Taye & Herrick 1430.

TABLE 5. Species restricted (or most common) to sandy areas in the Stansbury Mountains and vicinity.

---

<i>Abronia fragrans</i>
<i>Agropyron dasystachyum</i>
<i>Amaranthus blitoides</i>
<i>Astragalus ceramicus</i>
<i>Astragalus geyeri</i>
<i>Astragalus mollissimus</i>
<i>Camissonia parvula</i>
<i>Camissonia scapoidea</i> ssp. <i>brachycarpa</i>
<i>Chenopodium leptophyllum</i>
<i>Cryptantha circumscissa</i>
<i>Cryptantha fendleri</i>
<i>Cryptantha kelseyana</i>
<i>Cryptantha pterocarya</i>
<i>Cymopterus fendleri</i>
<i>Elymus flavescens</i>
<i>Erigeron argentatus</i>
<i>Eriogonum cernuum</i>
<i>Eriogonum hookeri</i>
<i>Eriogonum kearneyi</i>
<i>Eriogonum microthectum</i> var. <i>laxiflorum</i>
<i>Eriogonum umbellatum</i> var. <i>subaridum</i>
<i>Euphorbia ocellata</i> var. <i>arenicola</i>
<i>Gilia inconspicua</i>
<i>Gilia leptomeria</i>
<i>Gilia polycladon</i>
<i>Layia glandulosa</i>
<i>Leptodactylon pungens</i>
<i>Lupinus pusillus</i> var. <i>intermontanus</i>
<i>Lygodesmia dianthopsis</i>
<i>Malacothrix sonchoides</i>
<i>Mentzelia albicaulis</i>
<i>Nama densum</i>
<i>Nicotiana attenuata</i>
<i>Oenothera pallida</i>
<i>Orobanche corymbosa</i>
<i>Phacelia ivesiana</i>
<i>Psoralea lanceolata</i>
<i>Rumex venosus</i>
<i>Sporobolus cryptandrus</i>
<i>Stephanomeria exigua</i>
<i>Stipa comata</i>
<i>Streptanthella longirostris</i>
<i>Tiquilia nuttallii</i>
<i>Townsendia florifer</i>
<i>Tripterocalyx micranthus</i>
<i>Vulpia octoflora</i>

---



## DIVISION PINOPHYTA

## Cupressaceae

*Juniperus communis* L. var. *depressa* Pursh. Common Mountain Juniper. Frequent; meadows and open slopes at high elevations. 983.

*Juniperus osteosperma* (Torr.) Little. Utah Juniper. Common; a dominant on dry slopes at low and middle elevations. 1006.

*Juniperus scopulorum* Sarg. Rocky Mountain Juniper. Common; near streams and on mesic slopes from low to middle elevations. 863.

## Pinaceae

*Abies concolor* (Gord. & Glend.) Lindl. White Fir. Common; a dominant along streams and on mesic slopes at low and middle elevations. 356 (UT and UTC).

*Abies lasiocarpa* (Hook.) Nutt. Subalpine Fir. Common; a dominant at moderately high elevations. 347 (UT and UTC).

*Picea engelmannii* Parry. Engelmann Spruce. Common; a dominant at moderately high elevations. 350 (UT and UTC).

\**Picea pungens* Engelm. Blue Spruce. Rare; apparently planted in South Willow Canyon. 578 (UTC).

\**Pinus contorta* Dougl. Lodgepole Pine. Rare; apparently planted in South Willow Canyon. 1183.

*Pinus flexilis* James. Limber Pine. Common; a dominant on dry slopes from middle elevations to timberline. 355 (UT and UTC).

*Pinus longaeva* D. K. Bailey. Bristlecone Pine. Infrequent; locally a dominant on limestone slopes at moderately high elevations. 589.

*Pinus monophylla* Torr. & Frem. Singleleaf Pinyon. Infrequent; locally a dominant from low to middle elevations. 1031.

\**Pinus ponderosa* Laws. Ponderosa Pine. Rare; apparently planted in South Willow Canyon. 688 (UTC).

*Pseudotsuga menziesii* (Mirb.) Franco var. *glauca* (Beissn.) Franco. Douglas Fir. Common; a dominant along streams and on dry to mesic slopes from low to high elevations. 574.

## DIVISION MAGNOLIOPHYTA

## CLASS MAGNOLIOPSIDA

## Aceraceae

*Acer glabrum* Torr. Rocky Mountain Maple. Common; streamside and mesic slopes at middle elevations. 1105.

*Acer grandidentatum* Nutt. Bigtooth Maple. Infrequent; canyon bottoms at low elevations. 99 (UT and UTC).

*Acer negundo* L. Boxelder. Common; streamside from low to middle elevations. 862.

## Amaranthaceae

*Amaranthus blitoides* Wats. Prostrate Pigweed. [*A. graecizans* L.] Collected only from sandy site in juniper zone. 1301.

## Anacardiaceae

*Rhus trilobata* Nutt. var. *trilobata*. Squawbush. Frequent; dry slopes of foothills. 859.

## Apiaceae

*Angelica pinnata* Wats. Small-leaf Angelica. Infrequent; streamside at middle elevations. 1179.

*Berula erecta* (Huds.) Cov. Cutleaf Waterparsnip. Infrequent; along streams in the foothills. 1095.

\**Conium maculatum* L. Poison Hemlock. Infrequent; mesic, sometimes disturbed sites at low elevations. 498.

*Cymopterus fendleri* Gray. Chimaya. Rare; locally frequent in sandy areas of Skull Valley. 777.

*Cymopterus hendersonii* (Coult. & Rose) Cronq. [*Pteryxia hendersonii* (Coult. & Rose) Math. & Const.] Infrequent; meadows and open slopes above 3000 m. 501.

*Cymopterus longipes* Wats. Longfoot Springparsley. Frequent; open slopes from the foothills to near timberline. 982.

*Cymopterus purpurascens* (Gray) Jones. Purple Springparsley. Infrequent; dry foothills. 766 (UTC).

*Heracleum spondylium* L. ssp. *montanum* (Schleich.) Briq. Cow Parsnip. [*H. lanatum*

Michx.] Common; streamside at middle elevations. 1116.

*Ligusticum filicinum* Wats. Fernleaf Lovage. Infrequent; open slopes at middle elevations. Taye & Wall 1217.

*Lomatium dissectum* (Nutt.) Math. & Const. Fernleaf Lomatium. Open slopes from low to middle elevations. 874.

*Lomatium grayi* Coult. & Rose. Common; rocky slopes in juniper zone. 772.

*Lomatium nuttallii* (Gray) Macbr. Threadleaf Lomatium. Frequent; open slopes at middle elevations. Mill Fork, 135 (UT and UTC).

*Orogenia linearifolia* Wats. Indian Potato. Frequent; foothills in springtime. 369.

*Osmorhiza chilensis* H. & A. Sweetroot. Frequent; streamside and forest understory at middle elevations. 1103.

*Osmorhiza depauperata* Phil. Sweetroot. Frequent; streamside and forest understory at middle elevations. 1104.

*Osmorhiza occidentalis* (Nutt.) Torr. Sweetanise. Frequent; streamside and forest understory at middle elevations. 221 (UT and UTC).

#### Apocynaceae

*Apocynum androsaemifolium* L. Spreading Dogbane. Infrequent; open slopes at middle elevations. 1184.

*Apocynum cannabinum* L. Indian Hemp. Rare; on road embankment in South Willow Canyon. 572 (UTC).

#### Asclepiadaceae

*Asclepias asperula* (Dcne.) Woodson. Milkweed. Rare; dry slopes in juniper zone. 1121.

*Asclepias speciosa* Torr. Showy Milkweed. Infrequent; disturbed sites at low elevations. 593 (UTC).

#### Asteraceae

*Achillea millefolium* L. ssp. *lanulosa* (Nutt.) Piper. Common Yarrow. Common; meadows and mostly open slopes from the foothills to timberline. 1292.

*Agoseris aurantiaca* (Hook.) Greene. Orange Dandelion. Frequent; open slopes from the foothills to subalpine. 417 (UTC).

*Agoseris glauca* (Pursh) Raf. Mountain Dandelion. Open slopes from the foothills to subalpine. 693.

*Ambrosia acanthicarpa* Hook. Burweed. Common; sandy areas at low elevations. 686.

*Ambrosia psilostachya* DC. Western Ragweed. Collected only from streamside in the foothills near Delle Ranch. Taye & Dillman 1417.

*Antennaria corymbosa* E. Nels. Flattop Pussytoes. Frequent; meadows and open slopes near timberline. 969.

*Antennaria dimorpha* (Nutt.) T. & G. Low Pussytoes. Infrequent; juniper zone. 771.

*Antennaria microphylla* Rydb. Rosy Pussytoes. [*A. rosea* Greene] Infrequent; locally common on open slopes from middle elevations to subalpine. 931.

*Arctium minus* (Hill) Bernh. Common Burdock. Infrequent; streamside and shaded mesic sites from the valleys to middle elevations. 1187.

*Arnica cordifolia* Hook. Heartleaf Arnica. Common; meadows and forest understory from middle elevations to subalpine. 223 (UT and UTC).

*Arnica longifolia* D. C. Eat. Longleaf Arnica. Infrequent; locally common in mesic meadows at middle elevations. Taye & Wall 1172.

*Arnica mollis* Hook. Hairy Arnica. Infrequent; meadows and streamside at middle elevations. 624.

*Artemisia arbuscula* Nutt. Low Sagebrush. Open rocky slopes at middle elevations. 658.

*Artemisia dracuncululus* L. Tarragon. Frequent; open slopes from the foothills to middle elevations. 1266.

*Artemisia ludoviciana* Nutt. var. *incompta* (Nutt.) Cronq. Louisiana Sagebrush. Locally common in subalpine meadows. 661.

*Artemisia ludoviciana* Nutt. var. *ludoviciana*. Common; open slopes from the foothills to middle elevations. 1227.

*Artemisia nova* A. Nels. Black Sagebrush. [*A. arbuscula* Nutt. var. *nova* (A. Nels.) Cronq.] Rocky slopes at low elevations. 1015.

*Artemisia spiciformis* Osterhout. Locally common on open slopes just below timberline. 1259.

*Artemisia spinescens* D. C. Eat. Bud Sagebrush. Infrequent; dry valley sites. 891.

*Artemisia tridentata* Nutt. ssp. *tridentata*. Big Sagebrush. Common; open slopes from the valleys to middle elevations. 1016.

*Artemisia tridentata* Nutt. ssp. *vaseyana* (Rydb.) Beetle. Open slopes at middle elevations. 1241.

*Aster chilensis* Nees ssp. *adscendens* (Lindl.) Cronq. Everywhere Aster. Common; dry to mesic sites from the foothills to subalpine. 718.

*Aster engelmannii* (D. C. Eat.) Gray. Engelmann Aster. Infrequent; open forest understory at middle elevations. 692.

*Aster glaucodes* Blake. Infrequent; dry slopes at middle elevations. 727.

*Balsamorhiza hookeri* Nutt. var. *hispidula* (Sharp) Cronq. Hooker's Balsamroot. Seen only in the foothills near South Willow Canyon. 411 (UTC).

*Balsamorhiza sagittata* (Pursh) Nutt. Arrowleaf Balsamroot. Common; open slopes in the foothills. 378.

*Brickellia grandiflora* (Hook.) Nutt. Tasselflower. Rocky sites in juniper zone. Taye & Herrick 1427.

*Brickellia microphylla* (Nutt.) Gray. Littleleaf Brickellia. Rocky slopes at low elevations. 750.

\**Centaurea cyanus* L. Bachelor's Buttons. Rare; near guard station in South Willow Canyon. 171 (UT).

\**Centaurea maculosa* Lam. Rare; roadside near mouth of South Willow Canyon. 670.

\**Centaurea repens* L. Russian Knapweed. Rare; streamside near mouth of Box Canyon. 1148.

*Chaenactis douglasii* (Hook.) H. & A. Hoary Chaenactis. Frequent; juniper zone. 842.

*Chrysothamnus nauseosus* (Pallas) Britt. var. *albicaulis* (Nutt.) Rydb. Rubber Rabbitbrush. Frequent; valleys and foothills. 752.

*Chrysothamnus nauseosus* (Pallas) Britt. var. *consimilis* (Greene) Hall. Collected only from the foothills. 1019.

*Chrysothamnus nauseosus* (Pallas) Britt. var. *gnaphaloides* (Greene) Hall. [*C. nauseosus* ssp. *hololeucus* (Gray) H. & C.] Collected only from the foothills. 1265.

*Chrysothamnus nauseosus* (Pallas) Britt. var. *turbinatus* (Jones) Blake. Locally common in sandy soil of Skull Valley. Anderson 5118.

*Chrysothamnus viscidiflorus* (Hook.) Nutt. var. *puberulus* (D. C. Eat.) Jeps. Douglas Rabbitbrush. Locally common in clay soil in Skull Valley. Anderson 5116.

*Chrysothamnus viscidiflorus* (Hook.) Nutt. var. *viscidiflorus*. Common; open slopes from the foothills to middle elevations. 307.

\**Cichorium intybus* L. Common Chicory. Rare; streamside in the foothills. 1146.

*Cirsium eatonii* (Gray) Robins. Eaton Thistle. Frequent; open and wooded slopes from middle elevations to subalpine. Taye & Wall 1443.

*Cirsium scariosum* Nutt. Elk Thistle. Locally frequent in Skull Valley. 1274.

*Cirsium undulatum* (Nutt.) Spreng. Wavyleaf Thistle. Frequent; dry foothills. 1001.

\**Cirsium vulgare* (Savi) Ten. Bull Thistle. Disturbed sites at low to middle elevations. 259 (UTC).

*Conyza canadensis* (L.) Cronq. Horseweed. Infrequent; streamside at low elevations. 682.

*Crepis acuminata* Nutt. Tapertip Hawksbeard. Open slopes from the foothills to middle elevations. 435.

*Crepis atrabarba* Heller. Slender Hawksbeard. Open slopes at middle elevations. 605.

*Crepis modocensis* Greene. Low Hawksbeard. Infrequent; juniper zone. 527 (UTC).

*Crepis occidentalis* Nutt. Western Hawksbeard. Open slopes from the foothills to middle elevations. 867.

*Crepis runcinata* T. & G. var. *glauc* (Nutt.) Bab. & Stebbins. Meadow Hawksbeard. Rare; near spring in Skull Valley. 1376.

*Erigeron argentatus* Greene. Fleabane. Infrequent; sandy areas in foothills. 495.

*Erigeron compositus* Pursh. Fernleaf Fleabane. Infrequent; locally common in meadows and on open rocky slopes above 2800 m. 964.

*Erigeron divergens* T. & G. Spreading Fleabane. Rare; streamside near mouth of Spring Canyon. 1132.

*Erigeron eatonii* Gray. Eaton Fleabane. Common; open slopes and meadows from the foothills to alpine. 430.

*Erigeron engelmannii* A. Nels. Engelmann Fleabane. Valleys and foothills. 419.

*Erigeron leiomerus* Gray. Smooth Daisy. Infrequent; rocky slopes above 2800 m. 665.



*Erigeron lonchophyllus* Hook. Spearleaf Fleabane. Rare; near spring in Skull Valley. 1377.

*Erigeron speciosus* (Lindl.) DC. Showy Fleabane. Common; open and wooded slopes from middle elevations to subalpine. 650.

*Eupatorium occidentale* Hook. Western Eupatorium. Rare; base of quartzite cliff in Douglas fir community in Muskrat Canyon. Taye & Herrick 1440.

*Flaveria campestris* J. R. Johnst. Rare; locally common near springs in Skull Valley. Anderson & Thorne 5114.

*Gnaphalium palustre* Nutt. Lowland Cudweed. Rare; streamside near mouth of Spring Canyon. 1131.

*Grindelia squarrosa* (Pursh) Dun. Gumweed. Common; disturbed sites at low elevations. 258 (UT and UTC).

*Haplopappus acaulis* (Nutt.) Gray. Cushion Goldenweed. Infrequent; open rocky slopes from the foothills to middle elevations. 532a.

*Haplopappus lanceolatus* (Hook.) T. & G. Lanceleaf Goldenweed. Locally frequent in moist soil near spring in Skull Valley. Anderson & Thorne 5115.

*Haplopappus macronema* Gray. Whitestem Goldenweed. Frequent; meadows and open slopes from middle elevations to alpine. Taye & Wall 1212.

*Haplopappus rydbergii* Blake. Rydberg Goldenweed. Frequent; foothills to middle elevations, mostly on limestone outcrops. 999.

*Helianthella uniflora* (Nutt.) T. & G. One-flower Helianthella. Locally common on open slopes at middle elevations. 513.

*Helianthus annuus* L. Common Sunflower. Common; valleys and foothills, often in disturbed areas. 1161.

*Heliomeris multiflora* Nutt. Showy Goldeneye. [*Viguiera multiflora* (Nutt.) Blake] Frequent; meadows and wooded slopes at middle elevations. 729.

*Heterotheca villosa* (Pursh) Shinn. Hairy Golden Aster. [*Chrysopsis villosa* (Pursh) Nutt.] Dry rocky slopes in juniper zone. Taye & Herrick 1429.

*Iva axillaris* Pursh. Poverty Sumpweed. Infrequent; valleys and foothills near drainages. 1048.

*Lactuca pulchella* (Pursh) DC. Blue Lettuce. Infrequent; dry to mesic sites from the foothills to middle elevations. 602.

*Layia glandulosa* (Hook.) H. & A. White-daisy Tidytops. Infrequent; sandy areas of the valleys and foothills. 778.

*Leucelene ericoides* (Torr.) Greene. Rare; locally common on south-facing road embankment near Clover Creek in juniper zone. 457.

*Lygodesmia dianthopsis* (D. C. Eat.) Tomb. Skeletonweed. [*L. grandiflora* (Nutt.) T. & G.] Frequent; foothills, mostly in sandy areas. 481.

*Machaeranthera canescens* (Pursh) Gray. Hoary Aster. Frequent; dry slopes of juniper zone. 305.

*Madia glomerata* Hook. Cluster Tarweed. Rare; near little-used road above Hickman Pass in Douglas fir community. 659.

*Malacothrix sonchioides* (Nutt.) T. & G. Desert Dandelion. Infrequent; sandy areas in valleys and foothills. 796.

*Microseris nutans* (Geyer) Schultz-Bip. Nodding Microseris. Open slopes at middle elevations. 462.

*Onopardum acanthium* L. Scotch Cotton Thistle. Rare; roadside in Skull Valley. 1422.

*Perityle stansburii* (Gray) Macbr. [*Laphamia stansburii* Gray] Frequent; on rock outcrops in foothills. 545.

*Petradoria pumila* (Nutt.) Greene. Rock Goldenrod. Frequent; open slopes from the foothills to subalpine. 618.

*Rudbeckia occidentalis* Nutt. Western Coneflower. Frequent; moist sites at middle elevations. 1180.

*Senecio eremophilus* Rich. Desert Groundsel. Frequent; open and wooded slopes from middle elevations to subalpine. 699.

*Senecio fremontii* T. & G. var. *blitoides* (Greene) Cronq. Dwarf Mountain Butterweed. Wooded and open slopes near timberline. Neese 9666.

*Senecio integerrimus* Nutt. var. *exaltatus* (Nutt.) Cronq. Columbia Groundsel. Frequent; open and wooded slopes from the foothills to middle elevations. 392.

*Senecio multilobatus* T. & G. Lobeleaf Groundsel. Common; juniper zone. 551.

*Senecio streptanthifolius* Greene. Cleftleaf Groundsel. Frequent; open and wooded slopes from middle elevations to timberline. 526.

*Solidago canadensis* L. Canada Goldenrod. Mesic sites at middle elevations. 310 (UT and UTC).

*Solidago parryi* (Gray) Greene. Parry Goldenweed. [*Haplopappus parryi* Gray] Infrequent; open slopes near timberline. 704.

*Solidago sparsiflora* Gray. Slender Goldenrod. Open, rocky slopes from the foothills to middle elevations. 691.

°*Sonchus asper* (L.) Hill. Prickly Sowthistle. Collected only from moist sandy soil in the foothills at Sand Spring. 683 (UTC).

*Sphaeromeria diversifolia* (D. C. Eat.) Rydb. [*Tanacetum diversifolium* D. C. Eat.] Frequent; on rock outcrops from middle elevations to subalpine. 719.

*Stephanomeria exigua* Nutt. Small Wirelettuce. Infrequent; sandy areas in the valleys and foothills. 1190.

*Stephanomeria pauciflora* (Torr.) A. Nels. Wirelettuce. Rare; dry foothills of Salt Mountain. 1155.

°*Taraxacum officinale* Weber. Common Dandelion. Frequent; dry to mesic, mostly disturbed sites from low to middle elevations. 879.

*Tetradymia canescens* DC. Gray Horsebrush. Locally common in juniper zone. 214 (UT and UTC).

*Tetradymia glabrata* Gray. Littleleaf Horsebrush. Frequent; valleys and foothills. 895.

*Tetradymia nuttallii* T. & G. Nuttall Horsebrush. Frequent; valleys and foothills. 405.

*Tetradymia spinosa* H. & A. Cottonthorn Horsebrush. Rare; valleys. 893.

*Townsendia florifer* (Hook.) Gray. Showy Townsendia. Frequent; sandy areas of valleys and foothills. 480.

°*Tragopogon dubius* Scop. Yellow Salsify. Rare; disturbed sites at low elevations. 436.

*Wyethia amplexicaulis* Nutt. Mulesear Wyethia. Locally common on open slopes from the foothills to middle elevations. 882.

*Xanthium strumarium* L. Common Cocklebur. Rare; valleys and foothills in disturbed sites. 1269.

*Xanthocephalum sarothrae* (Pursh) Shinners. Broom Snakeweed. [*Gutierrezia sarothrae* (Pursh) Britt. & Rusby] Common; dry slopes from the valleys to middle elevations. 306.

#### Berberidaceae

*Mahonia repens* (Lindl.) G. Don. Oregon Grape [*Berberis repens* Lindl.] Common;

from dry slopes in the foothills to dense conifer forest at higher elevations. 963.

#### Betulaceae

*Alnus incana* (L.) Moench. Mountain Alder [*A. tenuifolia* Nutt.] Rare; locally frequent in North Willow Canyon near stream. 215 (UT and UTC).

#### Boraginaceae

*Amsinkia retrorsa* Suksd. Rigid Fiddleneck. Known from one collection from South Willow Canyon. Maguire 21807a (UTC).

*Amsinkia tessellata* Gray. Tessellate Fiddleneck. Infrequent; dry slopes at low elevations. 781.

*Cryptantha circumscissa* (H. & A.) Johnst. Matted Cryptantha. Infrequent; locally common in sandy areas of valleys and foothills. 775.

*Cryptantha fendleri* (Gray) Greene. Sandy areas of valleys and foothills. 809.

*Cryptantha flavocolata* (A. Nels.) Payson. Dry slopes of valleys and foothills. 795.

*Cryptantha humilis* (Gray) Payson. Dwarf Catseye. Common; rocky slopes below 2200 m. 794.

*Cryptantha kelseyana* Greene. Collected only from a sandy area in the foothills near Condie Meadows. 915.

*Cryptantha pterocarya* (Torr.) Greene. Winged Cryptantha. Collected only from a sandy area in Blue Canyon. 790.

*Cryptantha torreyana* (Gray) Greene. Dry slopes in the foothills. 471.

°*Cynoglossum officinale* L. Hound's Tongue. Frequent; disturbed sites at low elevations. 118 (UTC).

*Hackelia floribunda* (Lehm.) Johnst. Many-flowered Stickseed. Frequent; meadows and open slopes from middle elevations to subalpine. 1205.

*Hackelia patens* (Nutt.) Johnst. Spreading Stickseed. Frequent; dry slopes from low to middle elevations. 92 (UT and UTC).

°*Lappula echinata* Gilib. European Stickseed. Infrequent; disturbed sites in valleys and foothills. 784.

*Lappula occidentalis* (Wats.) Greene. Western Stickseed. [*L. redowskii* (Hornem.) Greene] Frequent; dry slopes of valleys and foothills. 888.

*Lithospermum ruderale* Dougl. Wayside Gromwell. Infrequent; dry foothills. 428.

*Mertensia arizonica* Greene var. *leonardii* (Rydb.) Johnst. Arizona Bluebells. Infrequent; streamside and in open forest understory at middle elevations. 1057.

*Mertensia brevistyla* Wats. Shortstyle Bluebells. Infrequent; dry foothills. 461 (UTC).

*Mertensia oblongifolia* (Nutt.) G. Don var. *nevadensis* (A. Nels.) L. O. Williams. Oblong-leaf Bluebells. Frequent; open slopes from the foothills to middle elevations. 13 (UT).

*Tiquilia nuttallii* (Hook.) A. Richards. [*Coldenia nuttallii* Hook.] Rare; locally frequent in sandy areas of Skull Valley. 954.

### Brassicaceae

\**Alyssum alyssoides* L. Pale Alyssum. Locally common in juniper zone. 1388.

\**Alyssum desertorum* Stapf. Desert Alyssum. Locally common in disturbed areas at low elevations. 398 (UTC).

*Arabis drummondii* Gray. Drummond's Rockcress. Infrequent; open forest and meadows from middle elevations to subalpine. 576.

*Arabis glabra* (L.) Bernh. Tower Mustard. Infrequent; open forest and meadows at middle elevations. 872.

*Arabis holboellii* Hornem. var. *secunda* (Howell) Jeps. Holboell's Rockcress. Common; open slopes from the foothills to timberline. 944.

*Arabis lignifera* A. Nels. Rockcress. Collected only from the foothills near Blue Canyon. 807.

\**Barbarea vulgaris* R. Br. Yellowrocket Wintercress. Rare; streamside in East Hickman Canyon. 1294.

\**Camelina microcarpa* Andr. False Flax. Infrequent; juniper zone. 805.

\**Capsella bursa-pastoris* (L.) Medicus. Shepherd's Purse. Rare; streamside in North Willow Canyon. 374.

\**Cardaria draba* (L.) Desv. Whitetop. Common; disturbed sites at low elevations. 1309.

*Chlorocrambe hastata* (Wats.) Rydb. Rare; subalpine conifer community on Deseret Peak. Neese 9709.

\**Chorispora tenella* (Pallas) DC. Locally common in disturbed sites at low elevations. 764.

*Descurainia pinnata* (Walt.) Britt. Western Tansymustard. Frequent; beneath juniper and on open slopes of foothills. 887.

\**Descurainia sophia* (L.) Webb. Flixweed. Frequent; disturbed sites at low elevations. 396.

*Draba cuneifolia* Nutt. Wedgeleaf Draba. Infrequent; dry slopes from low to middle elevations. 803.

*Draba stenoloba* Ledeb. Slender Draba. Infrequent; open slopes and moist meadows from middle elevations to timberline. 506.

*Erysimum asperum* (Nutt.) DC. Wallflower. Frequent; open slopes from the foothills to timberline. 885.

*Hutchinsia procumbens* (L.) Desv. Locally common in the valleys near springs. 1303.

*Lepidium montanum* Nutt. var. *montanum*. Mountain Pepperweed. Infrequent; sandy areas of Skull Valley. 951.

\**Lepidium perfoliatum* L. Claspings Pepperweed. Frequent; disturbed sites at low elevations. 892.

*Lesquerella occidentalis* Wats. var. *cinerascens* Maguire & Holmgren. Western Bladderpod. Infrequent; rocky slopes, usually near timberline and above. 453.

\**Malcolmia africana* (L.) R. Br. Frequent; disturbed sites at low elevations. 595 (UTC).

\**Nasturtium officinale* R. Br. Watercress. [*Rorippa nasturtium-aquaticum* (L.) Schinz & R. Keller] Frequent; along streams at low elevations. 849.

*Physaria chambersii* Rollins. Twinpod. Infrequent; dry slopes in juniper zone. 763.

*Rorippa curvipes* Greene. Yellowcress. Collected only from edge of South Willow Lake in moist soil. Taye & Wall 725 (UTC).

\**Sisymbrium altissimum* L. Tumbling Mustard. Infrequent; disturbed sites at low elevations. 925.

*Stanleya pinnata* (Pursh) Britt. Prince's Plume. Frequent; valleys and on dry slopes in the foothills. 998.

*Streptanthella longirostris* (Wats.) Rydb. Frequent; sandy areas of valleys and foothills. 793.

*Streptanthus cordatus* Nutt. Collected only from a juniper community near Johnson Pass. 770.

*Thelypodium integrifolium* (Nutt.) Endl. var. *integrifolium*. Rare; locally frequent in Skull Valley in greasewood community. 1194.



*Thelypodium sagittatum* (Nutt.) Endl. var. *vermicularis* Welsh & Reveal. Rare; greasewood community in Skull Valley. 1333.

\**Thlaspi arvense* L. Field Pennycress. Locally common in disturbed sites. 633 (UTC).

*Thlaspi montanum* L. var. *montanum*. Wild Candytuft. Frequent; meadows and open slopes from middle elevations to timberline. 962.

#### Cactaceae

*Echinocereus triglochidiatus* Engelm. var. *melanacanthus* (Engelm.) L. Benson. Hedgehog Cactus. Frequent; dry slopes in juniper zone, often growing from limestone or quartzite outcrops. 361.

*Opuntia polyacantha* Haw. Prickly Pear. Common; valleys to middle elevations on dry slopes. 897.

#### Campanulaceae

\**Campanula rapunculoides* L. Creeping Bellflower. Rare; abandoned ranch at mouth of Big Hollow. 744.

#### Capparidaceae

*Cleome serrulata* Pursh. Rocky Mountain Beeplant. Frequent; valleys and foothills in generally disturbed sites. 958.

#### Caprifoliaceae

*Sambucus caerulea* Raf. Blue Elderberry. Frequent; near streams, in mesic forest, and on dry open slopes from the foothills to middle elevations. 1122.

*Sambucus racemosa* L. Red Elderberry. Infrequent; meadows and open slopes from middle elevations to subalpine. 988.

*Symphoricarpos oreophilus* Gray. Mountain Snowberry. Common; forest understory and open slopes from the foothills to subalpine. 858.

#### Caryophyllaceae

*Arenaria kingii* (Wats.) Jones. King's Sandwort. Common; open slopes from the foothills to alpine. 425.

\**Cerastium fontanum* Baumg. Mouse-ear Chickweed. [*C. vulgatum* L.] Collected only from streamside in Davenport Canyon. 56 (UT and UTC).

\**Holosteum umbellatum* L. Jagged Chickweed. Infrequent; locally common in rocky foothills. 1315.

*Lychnis drummondii* (Hook.) Wats. Drummond Campion. [*Silene drummondii* Hook.] Infrequent; forest understory and open slopes from middle elevations to subalpine. 1238.

*Sagina saginoides* (L.) Britt. Arctic Pearlwort. Rare; moist subalpine sites. 555.

*Silene douglasii* Hook. Douglas Campion. Frequent; open forest understory and open slopes from middle elevations to subalpine. 1244.

*Stellaria jamesiana* Torr. Sticky Chickweed. Frequent; forest understory and open slopes at middle elevations. 125 (UT and UTC).

*Stellaria umbellata* Turcz. Umbrella Starwort. Rare; moist sites at middle elevations. Tye & Wall 1168.

#### Celastraceae

*Pachistima myrsinites* (Pursh) Raf. Mountain Lover. Frequent; shaded sites from the foothills to subalpine. 880.

#### Chenopodiaceae

*Allenrolfea occidentalis* (Wats.) Kuntze. Iodinebush. Locally common in Skull Valley in saline soil. 1195.

*Atriplex canescens* (Pursh) Nutt. Fourwing Saltbush. Frequent; valleys and lower foothills. 714.

*Atriplex confertifolia* (Torr. & Frem.) Wats. Shadscale. Common; a dominant in the valleys and lower foothills. 1005.

\**Atriplex hortensis* L. Garden Orach. Rare; collected only from a roadside in Tooele Valley. 1278.

\**Atriplex rosea* L. Tumbling Orach. Rare; collected only from a roadside in Rush Valley. 749.

*Atriplex tridentata* Kuntze. Three-toothed Saltbush. [*A. nuttallii* Wats.] Locally common in Skull Valley in saline soil. 1198.

\**Bassia hyssopifolia* (Pallas) Kuntze. Five-hook Bassia. Locally common in Skull Valley in saline soil. 1197.

*Ceratoides lanata* (Pursh) J. T. Howell. Winterfat. [*Eurotia lanata* (Pursh) Moq.] Infrequent; valleys and lower foothills. 900.

\**Chenopodium album* L. Lambsquarters. Infrequent; disturbed sites at low elevations. 597 (UTC).

\**Chenopodium botrys* L. Jerusalem-oak. Rare; rocky sites at low elevations. 1160.

*Chenopodium fremontii* Wats. Fremont Goosefoot. Common; open and wooded slopes from the valleys to middle elevations. 492.

\**Chenopodium glaucum* L. Oakleaf Goosefoot. Rare; dry pond in Skull Valley. 1273.

*Chenopodium hybridum* L. Mapleleaf Goosefoot. Rare; beneath juniper in sandy soil. 1033.

*Chenopodium leptophyllum* Nutt. Slimleaf Goosefoot. Rare; collected only from a sandy area in Skull Valley. 1411.

*Grayia spinosa* (Hook.) Moq. Spiny Hop-sage. Infrequent; valleys and foothills. 779.

\**Halogeton glomeratus* C. A. Mey. Halogeton. Common; disturbed sites in valleys. 959.

*Kochia americana* Wats. Graymolly. Infrequent; valleys. 890.

\**Kochia scoparia* (L.) Schrad. Belvedere Summer Cypress. Infrequent; disturbed sites at low elevations. 748.

*Salicornia europaea* L. Marshfire Pickleweed. [*S. rubra* A. Nels.] Locally common at Big Spring in saline soil. 1308.

*Salicornia pacifica* Standl. var. *utahensis* (Tidestr.) Munz. Utah Pickleweed. [*S. utahensis* Tidestr.] Locally common at Big Spring in saline soil. 1340.

\**Salsola iberica* Sennen & Pau. Russian Thistle. [*S. kali* L.] Common; disturbed sites at low elevations. 300 (UT).

*Sarcobatus vermiculatus* (Hook.) Torr. Greasewood. Common; a dominant in lower portions of valleys. 1276.

*Suaeda occidentalis* Wats. Western Seepweed. Locally common near Big Spring in Skull Valley. 1424.

*Suaeda torreyana* Wats. Bush Seepweed. Frequent; saline valleys. 1189.

#### Convolvulaceae

\**Convolvulus arvensis* L. Field Morning-glory. Infrequent; disturbed sites at low elevations. 95 (UT and UTC).

*Cressa truxillensis* H. B. K. Locally common near Big Spring in saline soil. 1404.

#### Cornaceae

*Cornus stolonifera* Michx. Red-osier Dogwood. Frequent; along streams at middle elevations. 1046.

#### Crassulaceae

*Sedum debile* Wats. Stonecrop. Infrequent; shaded and open rocky sites from middle elevations to timberline. 1245.

*Sedum lanceolatum* Torr. Lanceleaf Stonecrop. Rocky sites from middle elevations to alpine. 323 (UTC).

#### Cuscutaceae

*Cuscuta denticulata* Engelm. Desert Dodder. Parasitic on *Artemisia tridentata* and *Chrysothamnus nauseosus* in Skull Valley. 1421.

#### Elaeagnaceae

\**Elaeagnus angustifolia* L. Russian Olive. Not collected but seen cultivated at Willow Springs and Delle Ranch.

#### Euphorbiaceae

*Euphorbia glyptosperma* Engelm. Ridge-seed Spurge. Dry slopes in the foothills. 679.

*Euphorbia ocellata* Dur. & Hilg. var. *arenicola* (Parish) Jeps. Spurge. Rare; locally common on sand dunes in Skull Valley. 1203.

*Euphorbia serpyllifolia* Pers. Thymeleaf Spurge. Dry slopes in the valleys and foothills. 997.

#### Fabaceae

*Astragalus argophyllum* Nutt. var. *martinii* Jones. Silver-leaved Milkvech. Collected only from an open mid-elevation slope in East Hickman Canyon. 648.

*Astragalus beckwithii* T. & G. Beckwith Milkvech. Common; dry slopes of valleys and foothills. 782.

*Astragalus ceramicus* Sheld. Painted Milkvech. Rare; sandy foothills. 488.

*Astragalus cibarius* Sheld. Browse Milk-vetch. Common; open slopes in the foothills. 886.

*Astragalus convallarius* Greene var. *convallarius*. Lesser Rushy Milk-vetch. Frequent; open slopes from the foothills to medium elevations. 647.

*Astragalus eurekensis* Jones. Eureka Milk-vetch. Common; valley benches and foothills. 767.

*Astragalus geyeri* Gray. Geyer Milk-vetch. Infrequent; locally common in sandy areas. 814.

*Astragalus kentrophyta* Gray var. *implexus* (Canby) Barneby. Mountain Kentrophyta. Infrequent; locally common on open rocky slopes near timberline and above. 965.

*Astragalus lentiginosus* Dougl. var. *pohlilii* Welsh & Barneby. Infrequent; greasewood communities in Skull Valley. 1332.

*Astragalus mollissimus* Torr. var. *thompsonae* (Wats.) Barneby. Woolly Locoweed. Infrequent; sandy foothills. 792.

*Astragalus tenellus* Pursh. Pulse Milk-vetch. Infrequent; meadows and open rocky slopes from middle elevations to timberline. 586.

*Astragalus utahensis* (Torr.) T. & G. Utah Milk-vetch. Frequent; open slopes at low elevations. 788.

*Hedysarum boreale* Nutt. var. *boreale*. Northern Sweetvetch. Open slopes from the foothills to middle elevations. 947.

*Lathyrus brachycalyx* Rydb. var. *brachycalyx*. Rydberg Sweetpea. Infrequent; rocky foothills. 774.

*Lathyrus lanzwertii* Kellogg var. *lanzwertii*. Lanzwert Sweetpea. Infrequent; open to wooded subalpine slopes. 1451.

*Lathyrus pauciflorus* Fern. var. *utahensis* (Jones) Peck. Utah Sweetpea. Open to wooded slopes from the foothills to middle elevations. 64 (UT and UTC).

*Lupinus argenteus* Pursh var. *rubricaulis* (Greene) Welsh. Silvery Lupine. frequent; meadows and open slopes from middle elevations to timberline. 184.

*Lupinus pusillus* Pursh var. *intermontanus* (Heller) C. P. Sm. Dwarf Lupine. Infrequent; locally common in sandy areas. 815.

*Lupinus sericeus* Pursh var. *sericeus*. Silky Lupine. Open to wooded slopes at middle elevations. 1284.

\**Medicago lupulina* L. Black Medick. Infrequent; disturbed sites at low elevations. 869.

\**Medicago sativa* L. Alfalfa. Disturbed sites (and cultivated) at low elevations. 257 (UT).

\**Melilotus alba* Medicus. White Sweet-clover. Disturbed sites at low elevations. 669 (UTC).

\**Melilotus officinalis* (L.) Pallas. Yellow Sweetclover. Disturbed sites at low elevations. 98 (UT and UTC).

*Psoralea lanceolata* Pursh. var. *stenotachys* (Rydb.) Welsh. Dune Scurfpea. Frequent; sandy areas at low elevations. 479.

\**Trifolium fragiferum* L. Strawberry Clover. Collected only from streamside in South Willow Canyon. 1041b.

\**Trifolium repens* L. White Clover. Frequent; wet places from the foothills to sub-alpine. 853.

*Vicia americana* Muhl. var. *americana*. American Vetch. Infrequent; dry foothills. 460.

#### Fumariaceae

*Dicentra uniflora* Kellogg. Steer's Head. Rare; open woodland on mid-elevation slope in Mining Fork in early spring. 22 (UT and UTC).

#### Gentianaceae

*Centaurium exaltatum* (Griseb.) Wight. Western Centaury. Seen but not collected by K. Thorne at springs in Skull Valley.

*Swertia radiata* (Kell.) Kuntze. Green Gentian. [*Frasera speciosa* Dougl.] Frequent; mesic open and wooded slopes from middle elevations to alpine. 948.

#### Geraniaceae

\**Erodium cicutarium* (L.) L'Her. Heronsbill. Frequent; disturbed sites at low elevations. 27 (UT).

*Geranium parryi* (Engelm.) Heller. Parry Geranium. Infrequent; locally common on rocky (quartzite) slopes between 2200 m and 3000 m in elevation. Taye & Wall 1213. Jones and Jones (1943) state that the petal color for this species is pale to deep rose-purple. Plants collected from Stansburys, and



also from the Canyon Range 80 km to the south (S. Goodrich, pers. comm. 1981), have white petals and thus are possibly worthy of taxonomic distinction.

*Geranium richardsonii* Fisch. & Trautv. Richardson Geranium. Frequent; near streams at middle elevations. 1204.

*Geranium viscosissimum* Fisch. & Mey. Sticky Geranium. Frequent; mesic, mostly open slopes at middle elevations. 936.

#### Grossulariaceae

*Ribes aureum* Pursh. Golden Currant. Infrequent; valleys and foothills in drainage bottoms. 818.

*Ribes cereum* Dougl. Wax Currant. Common; open slopes, near streams, and in forest understory from the foothills to subalpine. 877.

*Ribes inerme* Rydb. Whitestem Gooseberry. Rare; streamside in South Willow Canyon. 1234.

*Ribes montigenum* McClatchie. Alpine Prickly Currant. Common; forest understory, meadows, and open slopes from middle elevations to alpine. 960.

*Ribes velutinum* Greene var. *velutinum*. Desert Gooseberry. Infrequent; dry rocky foothills. 1003.

*Ribes viscosissimum* Pursh. Sticky Currant. Frequent; forest understory at middle elevations. 1030.

*Ribes wolfii* Rothr. Wolf's Currant. Frequent; forest understory at middle elevations. 991.

#### Hydrophyllaceae

*Hydrophyllum occidentale* (Wats.) Gray. Western Waterleaf. Frequent; mesic, shaded to open sites from the foothills to middle elevations. 531.

*Nama densum* Lemmon. Matted Nama. Rare; sandy area of Skull Valley. 837.

*Phacelia crenulata* Torr. Scorpionweed. Rare; juniper community on Salt Mountain. 1153.

*Phacelia hastata* Dougl. Infrequent; open rocky areas from middle elevations to subalpine. 575.

*Phacelia incana* Brand. Seen only in rocky foothills near Big Spring. 1014.

*Phacelia ivesiana* Torr. Infrequent; sandy areas at low elevations. 791.

*Phacelia linearis* (Pursh) Holz. Threadleaf Scorpionweed. Infrequent; dry slopes from low to middle elevations. 789.

#### Juglandaceae

\**Juglans nigra* L. Black Walnut. Rare; abandoned ranch in Big Hollow. 741.

#### Lamiaceae

*Agastache urticifolia* (Benth.) Kuntze. Giant Hyssop. Frequent; open and wooded slopes at middle elevations. 175 (UT and UTC).

\**Marrubium vulgare* L. Common Horehound. Infrequent; disturbed sites at low elevations. 302.

*Mentha arvensis* L. Field Mint. Collected only from streamside near mouth of Spring Canyon. 1137.

\**Mentha piperita* L. Peppermint. Collected only from streamside at mouth of South Willow Canyon. 1186.

\**Mentha spicata* L. Spearmint. Collected only from marshy area in the foothills. Hardy 130.

*Monardella odoratissima* Benth. Infrequent; open rocky slopes from middle elevations to subalpine. 228 (UT and UTC).

\**Nepeta cataria* L. Catnip. Infrequent; dry to moist, sometimes disturbed sites at low elevations. 735.

#### Linaceae

*Linum perenne* L. Wild Blux Flax. [*L. lewisii* Pursh] Frequent; open slopes from the foothills to near timberline. 937.

#### Loasaceae

*Mentzelia albicaulis* Dougl. White Blazing Star. Rare; sandy areas in foothills. 484.

*Mentzelia laevicaulis* (Dougl.) T. & G. Blazing Star. Infrequent; dry slopes in foothills. 1267.

#### Malvaceae

*Iliamna rivularis* (Dougl.) Greene. Mountain Hollyhock. Infrequent; open and wooded slopes at middle elevations. 1109.

\**Malva neglecta* Wallr. Cheeseweed. Disturbed sites at low elevation. 96 (UT and UTC).

*Sidalcea neomexicana* Gray. New Mexico Checkermallow. Rare; near spring in Skull Valley. 1378.

*Sphaeralcea grossulariifolia* (H. & A.) Rydb. Gooseberryleaf Globemallow. Common; dry slopes of valleys and lower foothills. 860.

#### Moraceae

\**Morus alba* L. White Mulberry. Infrequent; cultivated at ranches. Taye & Dillman 1416.

#### Nyctaginaceae

*Abronia fragrans* Nutt. Snowball Sand Verbena. Frequent; sandy areas at low elevations. 838.

*Mirabilis linearis* (Pursh) Heimerl. Narrow-leaved Four-o'clock. [*Oxybaphus linearis* (Pursh) Robins.] Rare; dry valley benches. 1047.

*Tripterocalyx micranthus* (Torr.) Hook. Sandpuff. Rare; sand dunes in Skull Valley. 1391.

#### Oleaceae

\**Syringa vulgaris* L. Common Lilac. Rare; abandoned ranch in Big Hollow. 743.

#### Onagraceae

*Camissonia boothii* (Dougl.) Raven ssp. *alyssoides* (H. & A.) Raven. [*Oenothera alyssoides* H. & A.] Locally common in the foothills. 928.

*Camissonia minor* (A. Nels.) Raven. [*Oenothera minor* (A. Nels.) Munz] Known from one collection from the foothills. Flowers 1222 (UT). The lectotype was collected by S. Watson from Stansbury Island in 1869 (Raven 1969).

*Camissonia parvula* (Nutt.) Raven. [*Oenothera contorta* (Dougl.) Kearney var. *flexuosa* (A. Nels.) Munz] Infrequent; sandy areas of foothills. 810.

*Camissonia scapoidea* (T. & G.) Raven. [*Oenothera scapoidea* T. & G.] Infrequent; valleys and foothills. 957.

*Circaea alpina* L. Enchanter's Nightshade. Rare; understory of Douglas fir community in South Willow Canyon. 1106.

*Epilobium alpinum* L. Alpine Willowherb. [*E. hornemannii* Reichenb.] Rare; wet places at middle elevations. Taye & Wall 1164.

*Epilobium angustifolium* L. Fireweed. Common; streamside at middle elevations. 237 (UT).

*Epilobium brachycarpum* Presl. Autumn Willowherb. [*E. paniculatum* Nutt.] Frequent; dry slopes in the foothills. 304.

*Epilobium canum* (Greene) Raven. Garret Firechalice. [*Zauschneria garrettii* A. Nels.] Frequent; dry rocky slopes in juniper zone. 690.

*Epilobium ciliatum* Raf. Frequent; stream side from low to middle elevations. 261.

*Gaura parviflora* Dougl. Lizard Tail. Rare; roadside in Skull Valley. 1420.

*Gayophytum ramosissimum* Nutt. Hairstem Groundsmoke. Collected only from a sandy area in the foothills. 1035.

*Oenothera caespitosa* Nutt. Tufted Evening Primrose. Frequent; dry foothills. 866.

*Oenothera hookeri* T. & G. Hooker Evening Primrose. Rare; streamside near mouth of Spring Canyon. 1141.

*Oenothera pallida* Lindl. Pale Evening Primrose. Infrequent; dry, sometimes sandy areas in the foothills. 477.

#### Orobanchaceae

*Orobanche corymbosa* (Rydb.) Ferris. Flat-topped Broomrape. Rare; apparently parasitic on *Artemisia spinescens* and *Artemisia tridentata* in Skull Valley. 950.

*Orobanche fasciculata* Nutt. Clustered Broomrape. Rare; apparently parasitic on *Artemisia tridentata* in juniper woodland. 1075.

#### Papaveraceae

*Argemone munita* Dur. & Hilg. Prickly Poppy. Frequent; valleys and foothills, usually in disturbed sites. 912.

\**Papaver orientale* L. Oriental Poppy. Rare; abandoned ranch in Big Hollow. 745.

#### Plantaginaceae

\**Plantago lanceolata* L. Buckhorn Plantain. Collected only from roadside in South Willow Canyon. 1110.

\**Plantago major* L. Common Plantain. Moist sites in the foothills. 626.

#### Polemoniaceae

*Collomia grandiflora* Dougl. Large-flowered *Collomia*. Collected only from juniper community in Whiterocks Canyon. 883.

*Collomia linearis* Nutt. Narrowleaf *Collomia*. Infrequent; dry open slopes at middle elevations. 868.

*Gilia aggregata* (Pursh) Spreng. Scarlet *Gilia*. Frequent; open and wooded slopes from the foothills to middle elevations. 932.

*Gilia inconspicua* (Smith) Sweet. Shy *Gilia*. [*G. sinuata* Dougl.] Frequent; dry slopes at low elevations. 483.

*Gilia leptomeria* Gray. Infrequent; sandy areas at low elevations. 845.

*Gilia polycladon* Torr. Rare; sandy area in Skull Valley. 956.

*Leptodactylon pungens* (Torr.) Nutt. Prickly Phlox. Frequent; dry foothills in rocky or sandy soil. 797.

*Leptodactylon watsonii* (Gray) Rydb. Prickly *Gilia*. Infrequent; limestone outcrops in the foothills. 546.

*Microsteris gracilis* (Hook.) Greene. Locally frequent on dry slopes from low to middle elevations. 802.

*Phlox hoodii* Rich. Hood's Phlox. Frequent; valley benches and foothills. 493.

*Phlox longifolia* Nutt. Longleaf Phlox. Common; dry foothills. 395.

*Phlox pulvinata* (Wherry) Cronq. Cushion Phlox. [*P. caespitosa* Nutt.] Infrequent; rocky slopes near timberline and above. 971.

*Polemonium foliosissimum* Gray. Leafy Jacob's Ladder. Meadows at middle elevations. 993.

*Polemonium pulcherrimum* Hook. var. *delicatum* (Rydb.) Cronq. Skunkleaf. [*P. delicatum* Rydb.] Infrequent; rocky subalpine slopes. 985.

#### Polygonaceae

*Eriogonum brevicaule* Nutt. var. *laxifolium* (T. & G.) Reveal. Shortstem Wild Buckwheat. Frequent; dry slopes from low to middle elevations, often growing from cracks in rock outcrops. 432.

*Eriogonum cernuum* Nutt. var. *cernuum*. Nodding Buckwheat. Frequent; valleys and foothills, usually in sandy areas. 672.

*Eriogonum grayi* Reveal. Frequent; rocky slopes near timberline and above. 534.

*Eriogonum heracleoides* Nutt. Wyeth Buckwheat. Frequent; open slopes from middle elevations to subalpine. 614.

*Eriogonum hookeri* Wats. Rare; sandy areas in the foothills. 1150.

*Eriogonum kearneyi* Tidestr. Infrequent; locally common in sandy areas at low elevations. 675.

*Eriogonum microthecum* Nutt. var. *laxiflorum* Hook. Slenderbush Buckwheat. Collected only from a sandy area in juniper zone. Taye et al. 565 (UTC).

*Eriogonum ovalifolium* Nutt. var. *ovalifolium*. Cushion Buckwheat. Frequent; valleys and foothills, often in sandy areas. 839.

*Eriogonum racemosum* Nutt. Redroot Buckwheat. Infrequent; open slopes at middle elevations. 1078.

*Eriogonum umbellatum* Torr. var. *desereticum* Reveal. Sulfurflower. Open slopes from middle elevations to timberline. 732.

*Eriogonum umbellatum* Torr. var. *subaridum* S. Stokes. Frequent; sandy areas of foothills. 1037.

*Oxyria digyna* (L.) Hill. Mountain Sorrel. Frequent; rocky, often moist sites above 2600 m. Taye & Wall 1446.

*Polygonum aviculare* L. Prostrate Knotweed. Collected only from roadside in Tooele Valley. 596 (UTC).

*Polygonum douglasii* Greene. Douglas Knotweed. Frequent; open and wooded slopes at middle elevations. 1084.

*Polygonum sawatchense* Small. Sawatch Knotweed. Collected only from a sandy area in juniper zone. 1036.

\**Rumex crispus* L. Curly Dock. Frequent; mesic, often disturbed sites from the foothills to middle elevations. 557.

*Rumex salicifolius* Weinm. Willow Dock. Streamside at middle elevations. 558.

*Rumex venosus* Pursh. Wild Begonia. Infrequent; locally common in sandy areas at low elevations. 832.

#### Portulacaceae

*Claytonia lanceolata* Pursh. Lanceleaf Springbeauty. Common; moist soil at middle elevations in springtime. 381.



*Lewisia pygmaea* (Gray) Robins. Least Lewisia. Infrequent; locally common in meadows near timberline. 966.

*Montia perfoliata* (Donn) Howell. Miner's Lettuce. [*Claytonia perfoliata* Donn] Infrequent; streamside at low to middle elevations. 864.

#### Primulaceae

*Androsace septentrionalis* L. Northern Rock Jasmine. Frequent; rocky slopes and meadows above 2600 m, usually in moist soil. 145 (UTC).

*Glaux maritima* L. Sea Milkwort. Infrequent; near springs and streams at low elevations. 829.

*Primula parryi* Gray. Parry's Primrose. Infrequent; moist subalpine sites. 207 (UT and UTC).

#### Pyrolaceae

*Pyrola secunda* L. Sidebells Wintergreen. Infrequent; conifer understory at middle elevations. Tye & Wall 1214.

#### Ranunculaceae

*Aconitum columbianum* Nutt. Columbia Monkshood. Frequent; streamside at middle elevations. Tye & Wall 1169.

*Actaea rubra* (Ait.) Willd. Western Baneberry. Frequent; meadows and forest understory from middle elevations to subalpine. 1074.

*Aquilegia caerulea* James. Colorado Columbine. Infrequent; streamside, in meadows, and in open forest understory from middle elevations to subalpine. 992.

*Aquilegia formosa* Fisch. Red Columbine. Streamside at middle elevations. 559.

*Delphinium nuttallianum* Pritz. Nuttall Larkspur. [*D. nelsonii* Greene] Common; open slopes and forest understory from the valley benches to 2900 m. 394.

*Delphinium occidentale* Wats. Dunccecap Larkspur. Meadows and open forest understory at middle elevations. 180 (UT and UTC).

*Ranunculus cymbalaria* Pursh. Shore Buttercup. Common; wet areas from the valleys to subalpine. 825.

*Ranunculus glaberrimus* Hook. Sagebrush Buttercup. Rare; sagebrush community in North Willow Canyon. Tye & Tye 387.

*Ranunculus inamoenus* Greene. Infrequent; moist meadows and streamside from middle elevations to subalpine. 190 (UTC).

*Ranunculus juniperinus* Jones. Locally common in the foothills in early spring. Tye & Kass 1323.

\**Ranunculus testiculatus* Crantz. Bur Buttercup. Common; disturbed sites at low elevations. 1314.

*Thalictrum fendleri* Engelm. Fendler Meadowrue. Common; meadows and forest understory at middle elevations. 986.

#### Rhamnaceae

*Ceanothus martinii* Jones. Rare; sagebrush community in juniper zone at southern end of range. 525.

*Ceanothus velutinus* Dougl. Snowbrush. Infrequent; open and wooded slopes at middle elevations. 940.

#### Rosaceae

*Amelanchier alnifolia* Nutt. Serviceberry. Common; mesic, open and wooded slopes from the foothills to middle elevations. 400.

*Cercocarpus ledifolius* Nutt. Curl-leaf Mountain Mahogany. Common; a dominant on dry slopes in upper juniper zone. 1386.

*Cercocarpus ledifolius* Nutt. × *C. montanus* Raf. Rare; seen only in juniper zone in Vickory Canyon. 464.

*Cercocarpus montanus* Raf. Birchleaf Mountain Mahogany. Rocky slopes at middle elevations. 463 (UTC).

*Chamaebatiaria millefolium* (Torr.) Maxim. Fern Bush. Infrequent; dry rocky slopes below 2300 m in elevation, often growing from limestone outcrops. 1114.

*Cowania mexicana* D. Don var. *stansburiana* (Torr.) Jeps. Stansbury Cliffrose. Common; dry slopes at low elevations. 911.

*Crataegus douglasii* Lindl. var. *rivularis* (Nutt.) Sarg. Douglas Hawthorn. [*C. rivularis* Nutt.] Rare; along Clover Creek at southern end of the range. 1384.

*Fragaria vesca* L. var. *bracteata* (Heller) Davis. Woods Strawberry. Infrequent; mead-

ows and open forest understory at middle elevations. 541 (UTC).

*Geum macrophyllum* Willd. var. *perincisum* (Rydb.) Raup. Largeleaf Avens. Frequent; streamside at middle elevations. 497.

*Geum rossii* (R. Br.) Ser. var. *turbinatum* (Rydb.) Hitchc. Alpine Avens. Frequent; locally common in subalpine meadows and on rocky alpine slopes, often near persistent snow patches. 1067.

*Geum triflorum* Pursh var. *ciliatum* (Pursh) Fassett. Prairie Smoke. Rare; open, mesic north-facing slope at 1950 m in Davenport Canyon. 512.

*Holodiscus dumosus* (Nutt.) Heller. Bush Oceanspray. Frequent; dry rocky slopes from low to middle elevations. 1011.

*Ivesia gordonii* (Hook.) T. & G. Gordon Ivesia. Infrequent; open rocky slopes from middle elevations to alpine. Taye & Wall 1448.

*Petrophytum caespitosum* (Nutt.) Rydb. Tufted Rockmat. [*Spiraea caespitosa* Nutt.] Infrequent; locally common on limestone outcrops from low to middle elevations. 1185.

*Physocarpus malvaceus* (Greene) Kuntze. Mallow Ninebark. Frequent; open slopes and forest understory at middle elevations. 949.

*Potentilla diversifolia* Lehm. Varileaf Cinquefoil. Collected only from a cirque meadow in Antelope Canyon. 976.

*Potentilla glandulosa* Lindl. Gland Cinquefoil. Common; meadows, open forest understory, and on rocky slopes from middle elevations to subalpine. 990.

*Potentilla gracilis* Dougl. Soft Cinquefoil. Meadows and open slopes from middle elevations to subalpine. 625.

*Potentilla ovina* Macoun. Sheep Cinquefoil. [*P. wyomingensis* A. Nels.] Infrequent; meadows and open rocky slopes from subalpine to alpine. 970.

*Prunus virginiana* L. var. *melanocarpa* (A. Nels.) Sarg. Chokecherry. Common; streamside and on mesic slopes from the foothills to middle elevations. 994.

*Purshia tridentata* (Pursh) DC. Antelope Bitterbrush. Common; dry foothills. 811.

*Purshia tridentata* (Pursh) DC. × *Cowania mexicana* D. Don. Rare; rocky foothills near Big Spring. 1018.

*Rosa nutkana* Presl. Bristly Nootka Rose. Mesic, open and wooded slopes at middle elevations. 1285.

\**Rosa rubiginosa* L. Sweetbrier. Rare; streamside near abandoned power station at mouth of South Willow Canyon. 903.

*Rosa woodsii* Lindl. Wood's Rose. Common; drainage bottoms and other generally mesic sites at middle elevations. 147 (UT and UTC).

*Rubus idaeus* L. ssp. *melanolasius* (Dieck) Focke. Wild Red Raspberry. Frequent; forest understory and on rocky slopes from middle elevations to subalpine. 201.

*Rubus parviflorus* Nutt. Western Thimbleberry. Rare; one streamside collection from Dry Lake Fork. Neese 9662.

\**Sanguisorba minor* Scop. Burnet. Locally frequent in disturbed sites at low elevations. 1142.

#### Rubiaceae

*Galium aparine* L. Catchweed Bedstraw. Open forest understory and along streams from the foothills to middle elevations. 117 (UT and UTC).

*Galium bifolium* Wats. Twinleaf Bedstraw. Open forest understory at middle elevations. 509 (UTC).

*Galium multiflorum* Kellogg. Shrubby Bedstraw. Rare; dry rocky slopes in the foothills near Timpie. 1009.

*Galium triflorum* Michx. Sweetscented Bedstraw. Frequent; streamside and open forest understory at middle elevations. 1107.

#### Salicaceae

*Populus angustifolia* James. Narrowleaf Cottonwood. Common; a dominant along streams from the foothills to middle elevations. 401.

\**Populus fremontii* Wats. Fremont Cottonwood. Rare; abandoned ranch in Big Hollow. 739 (UTC).

\**Populus nigra* L. Lombardy Poplar. Cultivated at several ranches. 738 (UTC).

*Populus tremuloides* Michx. Quaking Aspen. Common; a dominant along streams at low elevations and on mesic slopes to moderately high elevations. 399.

*Salix amygdaloides* Anderss. Peachleaf Willow. Streamside in the foothills. 1335.

*Salix exigua* Nutt. Sandbar Willow. Common; streamside from low to middle elevations. 443.

*Salix rigida* Muhl. Yellow Willow. [*S. lutea* Nutt.] Common; streamside from low to middle elevations. 438.

*Salix scouleriana* Barratt. Scouler Willow. Locally frequent along streams at middle elevations. 444.

#### Santalaceae

*Comandra umbellata* (L.) Nutt. Bastard Toadflax. Locally frequent in dry, sometimes sandy areas in the foothills. 914.

#### Saxifragaceae

*Heuchera parvifolia* Nutt. Littleleaf Alumroot. Open forest understory and open rocky areas from middle elevations to subalpine. 533.

*Heuchera rubescens* Torr. Red Alumroot. Streamside, open forest understory, and in open rocky areas from middle elevations to subalpine. 1100.

*Lithophragma glabra* Nutt. Fringecup Woodland Star. [*L. bulbifera* Rydb.] Moist sites at middle elevations. 385a.

*Lithophragma parviflora* (Hook.) Nutt. Smallflower Woodland Star. Locally frequent at middle elevations in open forest understory and other shaded sites. 870.

*Mitella stauropetala* Piper. Miterwort. Common; streamside and open forest understory at middle elevations. 878.

*Saxifraga debilis* Engelm. Pygmy Saxifrage. Rare; below melting snowpatch in cirque of Big Creek Canyon. Taye & Wall 1170.

*Saxifraga odontoloma* Piper. Brook Saxifrage. [*S. arguta* D. Don] Infrequent; streamside at middle elevations. 1206.

*Saxifraga rhomboidea* Greene. Diamondleaf Saxifrage. Infrequent; near melting snow on cirque walls and in subalpine-alpine meadows. 503.

#### Scrophulariaceae

*Castilleja applegatei* Fern. var. *viscida* (Rydb.) Owenby. Sticky Indian Paintbrush. [*C. viscida* Rydb.] Frequent; open rocky slopes from middle elevations to alpine. 529.

*Castilleja chromosa* A. Nels. Desert Indian Paintbrush. Common; open slopes from the valleys to middle elevations. 407.

*Castilleja linariifolia* Benth. Narrowleaf Indian Paintbrush. Locally frequent on open mesic slopes at lower elevations. 111 (UT and UTC).

*Castilleja rhexifolia* Rydb. Splitleaf Indian Paintbrush. Infrequent; open slopes from subalpine to alpine. 579.

*Castilleja sulphurea* Rydb. Sulphur Indian Paintbrush. Infrequent; openings in conifer forest at middle elevations. 1112.

*Collinsia parviflora* Dougl. Blue-eyed Mary. Mesic slopes from low to middle elevations. 30 (UT).

*Mimulus breweri* (Greene) Rydb. Brewer's Monkeyflower. Rare; near subalpine spring in Dry Lake Fork. 613.

*Mimulus floribundus* Dougl. Rare; near mid-elevation spring in Big Creek Canyon. Taye & Wall 1165.

*Mimulus guttatus* Fisch. Yellow Monkeyflower. Common; streamside from low to middle elevations. 857.

*Mimulus lewisii* Pursh. Lewis Monkeyflower. Frequent; streamside at middle elevations. 153 (UT and UTC).

*Orthocarpus tolmiei* H. & A. Tolmie Owl Clover. Locally frequent on open slopes at middle elevations. 206 (UT and UTC).

*Penstemon cyananthus* Hook. Wasatch Penstemon. Frequent; open and wooded slopes from middle elevations to subalpine. 606.

*Penstemon humilis* Nutt. Low Penstemon. Common; rocky slopes from middle elevations to alpine. 588.

*Penstemon whippleanus* Gray. Whipple Penstemon. Infrequent; moist sites and conifer understory from middle elevations to subalpine. 195 (UT and UTC).

*Scrophularia lanceolata* Pursh. Lanceleaf Figwort. Known from one roadside collection in drainage bottom of East Hickman Canyon. 635 (UTC).

*Synthyris pinnatifida* Wats. Featherleaf Kittentails. Infrequent; locally common on rocky subalpine and alpine slopes. 535.

\**Verbascum thapsus* L. Flannel Mullein. Frequent; disturbed sites at low elevations. 199 (UT and UTC).



°*Verbascum virgatum* Stokes. Wand Mullein. Rare; disturbed sites at low elevations. 713 (UTC).

*Veronica americana* Schwein. American Brooklime. Frequent; streamside at middle elevations. 1049.

°*Veronica biloba* L. Bilobed Speedwell. Disturbed sites at low elevations. 112b (UTC).

*Veronica peregrina* L. Purslane Speedwell. Rare; streamside near mouth of Spring Canyon. 1128.

*Veronica serpyllifolia* L. Thyme-leaved Speedwell. Collected only from streamside in North Willow Canyon. 439.

#### Solanaceae

*Lycium andersonii* Gray. Anderson Wolfberry. Infrequent; dry rocky foothills at northern end of the range. 1328.

*Nicotiana attenuata* Torr. Coyote Tobacco. Locally frequent in disturbed and sandy sites at low elevations. 1088.

*Physalis virginiana* Mill. Virginia Groundcherry. [*P. longifolia* Nutt.] Seen only at roadside near South Mountain. 600 (UTC).

#### Tamaricaceae

°*Tamarix ramosissima* Ledeb. Salt Cedar Tamarisk. Rare; wet valley sites. 1144.

#### Ulmaceae

*Celtis reticulata* Torr. Netleaf Hackberry. Rare; near streamchannels in the foothills. 1140.

°*Ulmus pumila* L. Siberian Elm. Rare; near abandoned power station at mouth of South Willow Canyon. 904.

#### Urticaceae

*Urtica dioica* L. ssp. *gracilis* (Ait.) Seland. Stinging Nettle. Common; streamside and open forest understory at middle elevations. 181 (UTC).

#### Valerianaceae

*Valeriana acutiloba* Rydb. var. *pubicarpa* (Rydb.) Cronq. Sharpleaf Valerian. Infrequent; rocky open slopes near timberline and above. 984.

*Valeriana occidentalis* Heller. Western Valerian. Infrequent; meadows at middle elevations. 446.

#### Verbenaceae

*Verbena bracteata* Lag. & Rodr. Bracted Vervain. Frequent; dry to moist, usually disturbed sites at low elevations. 301.

#### Violaceae

*Viola adunca* Sm. var. *adunca*. Mountain Blue Violet. Common; open forest understory and streamside at middle elevations. 590.

*Viola adunca* Sm. var. *bellidifolia* (Greene) Harr. Rare; rock ledges of cirque in Dry Lake Fork. 191 (UT).

*Viola nephrophylla* Greene. Bog Violet. Collected only from streamside at Condie Meadows. 826.

*Viola nuttallii* Pursh. Yellow Prairie Violet. Mesic forest openings at middle elevations. 447.

*Viola purpurea* Kellogg. Goosefoot Violet. Frequent; open slopes and open forest understory from the foothills to subalpine. 372.

#### Viscaceae

*Phoradendron juniperinum* Engelm. Juniper Mistletoe. Infrequent; parasitic on *Juniperus osteosperma* in the foothills. 360.

#### CLASS LILIOPSIDA

#### Cyperaceae

*Carex atrata* L. var. *erecta* W. Boott. Black Sedge. Infrequent; subalpine meadows and open slopes near timberline. 702.

*Carex aurea* Nutt. Golden Sedge. Locally common near streams in the foothills. 820.

*Carex douglasii* F. Boott. Douglas Sedge. Collected only from streamside in Davenport Canyon. 61 (UT and UTC).

*Carex geyeri* F. Boott. Elk Sedge. Infrequent; forest understory and open mesic slopes at middle elevations. 516.

*Carex haydeniana* Olney. Cloud Sedge. Infrequent; locally common in subalpine meadows. 1246.

*Carex hoodii* F. Boott. Hood Sedge. Common; meadows and open slopes from middle elevations to subalpine. 511.

*Carex lenticularis* Michx. Locally common in wet areas at middle elevations. 412.

*Carex microptera* Mackenzie. Smallwing Sedge. Meadows and streamside at middle elevations. 413.

*Carex nebrascensis* Dewey. Nebraska Sedge. Common; streamside at low to middle elevations. 440.

*Carex nova* Bailey. Collected only from edge of South Willow Lake. Taye & Wall 724.

*Carex pachystachya* Cham. Chamisso Sedge. Collected only from cirque in Dry Lake Fork. 288 (UT and UTC).

*Carex petasata* Dewey. Collected only from an open, mesic mid-elevation slope in Davenport Canyon. 517.

*Carex phaeocephala* Piper. Dunhead Sedge. Locally common in subalpine meadows. 703.

*Carex praegracilis* W. Boott. Collected only from streamside in Davenport Canyon. 424.

*Carex raynoldsii* Dewey. Raynold's Sedge. Locally common in meadows and along streams at middle elevations. 552.

*Carex rossii* F. Boott. Ross Sedge. Conifer understory and meadows from middle elevations to subalpine. 705.

*Carex vallicola* Dewey. Valley Sedge. Meadows and open forest understory from middle elevations to subalpine. 580.

*Eleocharis palustris* (L.) R. & S. Common Spikerush. [*E. macrostachya* Britt.] Locally common in wet places from the valleys to middle elevations. 906.

*Eleocharis rostellata* (Torr.) Torr. Beaked Spikerush. Locally common near streams in the foothills. 823.

*Scirpus acutus* Muhl. Hardstem Bulrush. Wet places at low elevations. 827.

*Scirpus maritimus* L. Alkali Bulrush. Rare; pond in Skull Valley. 1272.

*Scirpus pungens* Vahl. Common Three-square. Seen only near stream at Condie Meadows. 851.

#### Iridaceae

*Iris missouriensis* Nutt. Western Iris. Rare; near spring in Skull Valley. 1374.

*Sisyrinchium idahoense* Bickn. Idaho Blue-eyed Grass. Rare; near springs and streams at low elevations. 847.

#### Juncaceae

*Juncus arcticus* Willd. Wiregrass. [*J. balticus* Willd.] Common; wet places at low elevations. 423.

*Juncus articulatus* L. Jointed Rush. Rare; streamside at mouth of South Willow Canyon. 907.

*Juncus bufonius* L. Toad Rush. Infrequent; streamside at low to middle elevations. 1129.

*Juncus ensifolius* Wikstr. var. *brunnescens* (Rydb.) Cronq. Locally common along streams at low elevations. 416.

*Juncus ensifolius* Wikstr. var. *ensifolius*. Collected only from streamside in South Willow Canyon. 218 (UT and UTC).

*Juncus ensifolius* Wikstr. var. *montanus* (Engelm.) C. L. Hitchc. Streamside at middle elevations. 1045.

*Juncus longistylis* Torr. Longstyle Rush. Locally common in meadows and along streams in the foothills. 822.

*Juncus torreyi* Cov. Torrey Rush. Infrequent; locally abundant in wet places at low elevations. 684.

*Luzula spicata* (L.) DC. Spike Woodrush. Infrequent; locally common in meadows and on rocky slopes from subalpine to alpine. 967.

#### Juncaginaceae

*Triglochin maritima* L. Shore Arrowgrass. Rare; wet area in foothills at Condie Meadows. 819.

#### Liliaceae

*Allium acuminatum* Hook. Tapertip Onion. Common; dry slopes and open forest understory from the valleys to middle elevations. 603.

*Allium nevadense* Wats. Nevada Onion. Infrequent; valleys and foothills. Taye & Kass 1324.

*Calochortus nuttallii* T. & G. Sego Lily. Common; open slopes from the valleys to subalpine. 476. The state flower of Utah.

*Disporum trachycarpum* (Wats.) Benth. & Hook. Fairy Bells. Infrequent; forest understory at middle elevations. 1182.

*Erythronium grandiflorum* Pursh. Glacier Lily. Common; moist slopes from low to middle elevations in springtime. 873.

*Fritillaria atropurpurea* Nutt. Leopard Lily. Open slopes from middle elevations to near timberline. 961.

*Fritillaria pudica* (Pursh) Spreng. Yellow Bell. Locally common in springtime on moist slopes. 380.

*Smilacina stellata* (L.) Desf. Starry Solomon-plume. Low to middle elevations in open forest understory and along streams. 817.

*Veratrum californicum* Dur. False Hellebore. Infrequent; locally common in wet places from middle elevations to subalpine. 242 (UT and UTC).

*Zigadenus elegans* Pursh. Mountain Death Camas. Infrequent; subalpine meadows and open conifer understory near timberline. 654.

*Zigadenus paniculatus* (Nutt.) Wats. Foot-hill Death Camas. Common; dry, mostly open slopes from the valleys to middle elevations. 553.

#### Orchidaceae

*Corallorhiza striata* Lindl. Striped Coralroot. Infrequent; dense conifer forest at middle elevations. 1059.

*Goodyera oblongifolia* Raf. Rattlesnake Plantain. Rare; rich understory of conifer-deciduous forest in South Willow Canyon. 264 (UT).

*Habenaria dilatata* (Pursh) Hook. White Bog Orchid. Rare; wet area below South Willow Lake. Taye & Wall. 722.

*Habenaria unalascensis* (Spreng.) Wats. Alaska Rein Orchid. Rare; near springs and in aspen understory at middle elevations. 1060.

#### Poaceae

\**Agropyron cristatum* (L.) Gaertn. Crested Wheatgrass. Common; disturbed areas and a dominant in portions of the valleys. 97 (UT and UTC).

*Agropyron dasystachyum* (Hook.) Scribn. Thickspike Wheatgrass. Infrequent; sandy areas at low elevations. 831.

\**Agropyron elongatum* (Host) Beauv. Tall Wheatgrass. Locally common in disturbed areas at low elevations. 639.

\**Agropyron intermedium* (Host) Beauv. Intermediate Wheatgrass. Locally common in disturbed areas at low elevations. 629.

*Agropyron smithii* Rydb. Western Wheatgrass. Collected only from a sandy area in a juniper community. 638.

*Agropyron spicatum* (Pursh) Scribn. & Smith. Bluebunch Wheatgrass. Common; dry slopes from the foothills to middle elevations. 470.

*Agropyron trachycaulum* (Link) Malte. Slender Wheatgrass. Common; streamside, and on open and wooded slopes from middle elevations to alpine. 609.

*Agrostis exarata* Trin. Spike Redtop. Frequent; wet places from the foothills to subalpine. 1125a.

\**Agrostis stolonifera* L. Redtop Bentgrass. Common; streamside from low to middle elevations. 734.

\**Alopercurus pratensis* L. Meadow Foxtail. Rare; pasture near guard station in South Willow Canyon. 1063.

*Aristida purpurea* Nutt. Three-awn. [*A. longiseta* Steud.] Infrequent; valleys and foothills. 601.

\**Arrhenatherum elatius* (L.) Presl. Tall Oatgrass. Rare; pasture near guard station in South Willow Canyon. 640 (UTC).

\**Bromus brizaeformis* Fisch. & Mey. Rattlesnake Chess. Rare; pasture near guard station in South Willow Canyon. 94 (UT and UTC).

*Bromus carinatus* H. & A. California Brome. [*B. marginatus* Nees; *B. polyanthus* Scribn.] Common; streamside and open to wooded slopes from middle elevations to subalpine. 646.

*Bromus ciliatus* L. Fringed Brome. Infrequent; open woods and meadows at middle elevations. 709.

\**Bromus commutatus* Schrad. Hairy Chess. Seen only near streamside at mouth of South Willow Canyon. 1053.

\**Bromus inermis* Leys. Smooth Brome. Disturbed sites at low elevations. 103 (UT and UTC).

\**Bromus japonicus* Thunb. Japanese Chess. Disturbed sites at low elevations. 1398.

\**Bromus tectorum* L. Cheatgrass. Common; a dominant species in disturbed areas, also occurring in undisturbed areas. 434.



*Catabrosa aquatica* (L.) Beauv. Brookgrass. Frequent; wet places from the foothills to subalpine. 908.

*Cinna latifolia* (Trev.) Griseb. Drooping Woodreed. Common; streamside at middle elevations. 238.

\**Dactylis glomerata* L. Orchard Grass. Common; streamside and open forest understory from the foothills to middle elevations. 60 (UT and UTC).

*Danthonia intermedia* Vasey. Timber Oatgrass. Rare; locally common in a cirque meadow in Dry Lake Fork. 352 (UT and UTC).

*Distichlis spicata* (L.) Greene. Saltgrass. Locally common in the valleys. 1120.

*Echinochloa crusgalli* (L.) Beauv. Barnyard Grass. Rare; streamside at mouth of Spring Canyon. 1124.

*Elymus cinereus* Scribn. & Merr. Great Basin Wildrye. Common; valleys to middle elevations, often in dry drainage bottoms. 1223.

*Elymus flavescens* Scribn. & Smith. Yellow Wildrye. Infrequent; locally common in sandy areas of Skull Valley and nearby foothills. 637.

*Elymus glaucus* Buckl. Blue Wildrye. Streamside and open forest understory at middle elevations. 1260.

\**Elymus junceus* Fisch. Russian Wildrye. Infrequent; disturbed sites at low elevations. 861.

*Elymus triticoides* Buckl. Creeping Wildrye. Rare; near spring in Skull Valley. 1380.

\**Festuca arundinacea* Schreb. Reed Fescue. Seen only at streamside in Davenport Canyon. 518.

*Festuca ovina* L. var. *brevifolia* (R. Br.) Wats. Alpine Fescue. Frequent; meadows and rocky slopes above 2800 m. 581.

*Glyceria striata* (Lam.) Hitchc. Fowl Mannagrass. Frequent; wet places at middle elevations. 441.

*Hilaria jamesii* (Torr.) Benth. Galleta. Infrequent; dry slopes at low elevations. 910.

*Hordeum brachyantherum* Nevski. Meadow Barley. Infrequent; wet places at low to medium elevations. 340 (UT).

*Hordeum jubatum* L. Foxtail Barley. Frequent; mostly in disturbed sites at low elevations. 591.

\**Hordeum murinum* L. Infrequent; disturbed sites at low elevations. 905.

*Leucopoa kingii* (Wats.) W. A. Weber. Spikegrass. [*Hesperochloa kingii* (Wats.) Rydb.] Common; dry meadows and rocky slopes from middle elevations to alpine. 450.

\**Lolium multiflorum* Lam. Italian Ryegrass. Rare; pasture near guard station in South Willow Canyon. 112 (UT).

*Melica bulbosa* Geyer. Oniongrass. Locally frequent on open slopes at middle elevations. 607.

*Muhlenbergia asperifolia* (Nees & Meyen) Parodi. Scratchgrass Muhly. Rare; streamside at Condie Meadows. 1093.

*Oryzopsis hymenoides* (R. & S.) Ricker. Indian Ricegrass. Common; dry slopes from the foothills to middle elevations. 1032.

*Phleum alpinum* L. Alpine Timothy. Infrequent; moist subalpine sites. Taye & Wall 1178.

\**Phleum pratense* L. Timothy. Collected only from streamside in South Willow Canyon. 268 (UT).

*Phragmites australis* (Cav.) Trin. Common Reed. [*P. communis* Trin.] Infrequent; valleys and foothills near springs. 1134.

*Poa ampla* Merr. Big Bluegrass. Collected only from streamside in South Willow Canyon. 114 (UT and UTC).

\**Poa annua* L. Annual Bluegrass. Seen only at streamside in South Willow Canyon. 415 (UT and UTC).

\**Poa bulbosa* L. Bulbous Bluegrass. Infrequent; disturbed sites at low elevations. 397 (UTC).

*Poa canbyi* (Scribn.) Howell. Canby Bluegrass. Collected only from mouth of Davenport Canyon. 24 (UT).

\**Poa compressa* L. Canada Bluegrass. Rare; streamside in the foothills. 1127.

*Poa fendleriana* (Steud.) Vasey. Mutton Grass. Common; dry meadows and mostly open slopes from middle elevations to alpine. 451.

*Poa leptocoma* Trin. Bog Bluegrass. Mesic slopes and meadows from middle elevations to subalpine. Taye & Wall 1175.

*Poa nervosa* (Hook.) Vasey. Wheeler Bluegrass. Frequent; open forest understory and meadows from middle elevations to subalpine. 989.

\**Poa pratensis* L. Kentucky Bluegrass. Frequent; disturbed to pristine, generally mesic sites from the foothills to subalpine. 695 (UTC).

*Poa reflexa* Vasey & Scribn. Nodding Bluegrass. Locally common in subalpine meadows. 1253.

*Poa secunda* Presl. Sandberg Bluegrass. [*P. sandbergii* Vasey] Common; open slopes from the valleys to alpine. Arnow (1981) cites *P. secunda* as being the correct name for this species.

\**Polypogon monspeliensis* (L.) Desf. Rabbit-foot Grass. Frequent; streamside at low elevations. 685.

\**Puccinellia distans* (L.) Parl. European Alkaligrass. Rare; streamside at middle elevations. 643.

\**Puccinellia fasciculata* (Torr.) Bickn. Alkaligrass. Locally common at Big Spring in Skull Valley. 1373.

\**Secale cereale* L. Rye. Infrequent; valley benches (cultivated) and occasionally higher. 598.

*Sitanion hystrix* (Nutt.) Smith. Squirreltail. Common; dry, mostly open slopes from the foothills to alpine. 499.

*Sphenopholis obtusata* (Michx.) Scribn. Prairie Wedgescale. Rare; streamside near mouth of Spring Canyon. 1125b.

*Sporobolus airoides* (Torr.) Torr. Alkali Sacaton. Infrequent; valleys and foothills. 1023.

*Sporobolus cryptandrus* (Torr.) Gray. Sand Dropseed. Frequent; valleys and foothills, usually in sandy areas. 549.

*Stipa comata* Trin. & Rupr. Needle-and-Thread Grass. Frequent; valleys and foothills in sandy areas. 844.

*Stipa lettermannii* Vasey. Letterman Needlegrass. Rare; cirque meadow in Dry Lake Fork. 351 (UT and UTC).

*Stipa nelsonii* Scribn. Columbia Needlegrass. [*S. columbiana* Macoun] Frequent; meadows and mostly open slopes from middle elevations to subalpine. 1113.

*Trisetum spicatum* (L.) Richter. Spike Trisetum. Common; meadows, streamside, and open forest understory from middle elevations to alpine. 582.

\**Triticum aestivum* L. Wheat. Locally common (cultivated) at mouth of East Hickman Canyon. 599 (UTC).

\**Vulpia myuros* (L.) C. C. Gmelin. Foxtail Fescue. [*Festuca myuros* L.] Rare; streamside near mouth of Spring Canyon. 1138.

*Vulpia octoflora* (Walt.) Rydb. Six-weeks Fescue. [*Festuca octoflora* Walt.] Infrequent; valleys and foothills, usually in sandy areas. 808.

#### Ruppiaceae

*Ruppia maritima* L. Widgeongrass. Locally common in Big Spring in Skull Valley. 1401.

#### Typhaceae

*Typha latifolia* L. Common Cattail. Infrequent; streamside in the foothills. 1145.

#### Zannichelliaceae

*Zannichellia palustris* L. Horned Pondweed. Rare; in ponds and streams at low elevations. 1372.

#### LITERATURE CITED

- ALLRED, K. W. 1975. Timpanogos flora. Unpublished thesis. Brigham Young Univ., Provo, Utah. 178 pp.
- ARNOW, L. 1981. *Poa secunda* Presl versus *P. sandbergii* Vasey, (Poaceae). Syst. Bot. 6:412-421.
- ARNOW, L., B. ALBEE, AND A. WYCKOFF. 1980. Flora of the central Wasatch Front, Utah. 2d ed. rev. Univ. of Utah Printing Service, Salt Lake City. 663 pp.
- BEHLE, W. H. 1978. Avian biogeography of the Great Basin and Intermountain Region. Great Basin Nat. Mem. 2:55-80.
- BILLINGS, W. D. 1951. Vegetational zonation in the Great Basin of western North America. Int. Union Biol. Sci. Ser. B, 9:101-122.
- . 1978. Alpine phytogeography across the Great Basin. Great Basin Nat. Mem. 2:105-117.
- CRONQUIST, A., A. H. HOLMGREN, N. H. HOLMGREN, AND J. L. REVEAL. 1972. Intermountain flora. Vol. 1. Hafner Publ. Co., New York. 270 pp.
- CRONQUIST, A., A. H. HOLMGREN, N. H. HOLMGREN, J. L. REVEAL, AND P. K. HOLMGREN. 1977. Intermountain flora. Vol. 6. Columbia Univ. Press, New York. 584 pp.
- HARPER, K. T., D. C. FREEMAN, W. K. OSTLER, AND L. G. KLIKOFF. 1978. The flora of Great Basin mountain ranges: diversity, sources, and dispersal ecology. Great Basin Nat. Mem. 2:81-103.
- HITCHCOCK, C. L., AND A. CRONQUIST. 1973. Flora of the Pacific Northwest. Univ. of Washington Press, Seattle. 750 pp.
- HOLMGREN, A. H. 1972. Vascular plants of the Northern Wasatch. 4th ed. Privately printed by the author, Logan, Utah. 202 pp.
- HOLMGREN, A. H., L. M. SHULTZ, AND T. K. LOWREY. 1976. *Sphaeromeria*, a genus closer to *Artemisia* than to *Tanacetum* (Asteraceae: Anthemideae). Brittonia 28:255-262.

- HOLMGREN, N. H. 1972. Plant geography of the Intermountain Region. Pages 77-161 in A. Cronquist, A. H. Holmgren, N. H. Holmgren, and J. L. Reveal, eds., Intermountain flora. Vol. 1. Hafner Publ. Co., New York.
- HOUGHTON, J. G. 1969. Characteristics of rainfall in the Great Basin. Desert Research Institute, Univ. of Nevada System, Reno. 205 pp.
- JONES, G. N., AND F. F. JONES. 1943. A revision of the perennial species of *Geranium* of the United States and Canada. *Rhodora* 45:5-26, 32-53.
- JONES, M. E. 1965. Botanical exploration of Marcus E. Jones, 1876-1919: an autobiographical account. *Leaflet W. Bot.* 10:189-236.
- KEARNEY, T. H., L. J. BRIGGS, H. L. SHANTZ, J. W. McLANE, AND R. L. PIEMEISEL. 1914. Indicator significance of vegetation in Tooele Valley, Utah. *J. Agric. Res.* 1:365-417.
- LEWIS, M. E. 1971. Flora and major plant communities of the Ruby-East Humboldt mountains with special emphasis on Lamoille Canyon. Report to Humboldt National Forest, Elko, Nevada. 62 pp.
- . 1973. Wheeler Peak Area species list. Report to Intermountain Region, U.S. Forest Service, Ogden, Utah. 17 pp.
- . 1975. Plant communities of the Jarbidge Mountain complex, Humboldt National Forest. Report to Intermountain Region, U.S. Forest Service, Ogden, Utah. 22 pp.
- . 1980. Plants of the Wasatch Plateau, Utah. Report to Intermountain Region, U.S. Forest Service, Ogden, Utah. 37 pp.
- McMILLAN, C. 1948. A taxonomic and ecological study of the flora of the Deep Creek Mountains of central western Utah. Unpublished thesis. Univ. of Utah, Salt Lake City. 99 pp.
- MORRISON, R. B. 1965. Quaternary geology of the Great Basin. Pages 265-285 in H. E. Wright, Jr., and D. G. Frey, eds., *The Quaternary of the United States*. Princeton Univ. Press, Princeton, New Jersey.
- NEBEKER, G. T. 1975. Manual of the flora of the East Tintic Mountains, Utah. Unpublished thesis. Brigham Young Univ., Provo, Utah. 57 pp.
- PREECE, S. J., JR. 1950. Floristic and ecological features of the Raft River Mountains of north-western Utah. Unpublished thesis. Univ. of Utah, Salt Lake City. 103 pp.
- REVEAL, J. L. 1973. *Eriogonum* (Polygonaceae) of Utah. *Phytologia* 25:169-217.
- . 1979. Biogeography of the Intermountain Region: a speculative appraisal. *Mentzelia* 4:1-92.
- RIGBY, J. K. 1958. Geology of the Stansbury Mountains. *Utah Geol. Soc. Guidebook* 13:1-134.
- SOIL CONSERVATION SERVICE. 1973. General soil map—Utah. Utah Agric. Expt. Sta., Logan.
- . 1979. Mountain precipitation summary for Utah. Snow Survey Section, Federal Bldg., Salt Lake City, Utah. 168 pp.
- STANSBURY, H. 1852. Exploration and survey of the valley of the Great Salt Lake of Utah, including a reconnaissance of a new route through the Rocky Mountains. Lippincott, Grambo, Philadelphia. 487 pp.
- TAYE, A. C. 1981. A floristic and phytogeographic study of the Stansbury Mountains, Utah. Unpublished thesis. Brigham Young Univ., Provo, Utah. 172 pp.
- THORNE, R. F. 1967. A flora of Santa Catalina Island, California. *Aliso* 6(3):1-77.
- TIDESTROM, I. 1913. Novitates florae utahensis. *Proc. Biol. Soc. Washington* 26:121-122.
- TREWARTHA, G. T. 1968. An introduction to climate. 4th ed. McGraw-Hill, New York. 408 pp.
- U.S. DEPARTMENT OF COMMERCE. 1980. Climatological data annual summary, Utah, 1979. National Oceanic and Atmospheric Administration, Asheville, North Carolina. 15 pp.
- WELLS, P. V. 1980. Quaternary vegetational history of the Great Basin. *Bull. Ecol. Soc. Amer.* 57:106 (abstr.)
- WELSH, S. L. 1978a. Endangered and threatened plant species inventory for Deep Creek Mountains, Utah. Final unpublished report. Bureau of Land Management. 159 pp.
- . 1978b. Utah flora: Fabaceae (Leguminosae). *Great Basin Nat.* 38:225-367.
- . 1982. Utah plant types—historical perspective 1840 to 1981—annotated list and bibliography. *Great Basin Nat.* 42:129-195.
- WELSH, S. L., N. D. ATWOOD, S. GOODRICH, E. NEESE, K. H. THORNE, AND B. ALBEE. 1981. Preliminary index of Utah vascular plant names. *Great Basin Nat.* 41:1-108.
- WELSH, S. L., AND R. C. BARNEY. 1981. *Astragalus lentiginosus* (Fabaceae) revisited—a unique new variety. *Isleya* 2(1):1-2.
- WELSH, S. L., AND G. MOORE. 1973. Utah plants, Tracheophyta. 3d ed. Brigham Young Univ. Press, Provo, Utah. 474 pp.
- WELSH, S. L., AND J. L. REVEAL. 1977. Utah flora: Brassicaceae (Cruciferae). *Great Basin Nat.* 37:279-365.
- WILSON, L., M. E. OLSEN, T. B. HUTCHINGS, A. R. SOUTHARD, AND A. J. ERICKSON. 1975. Soils of Utah. Agric. Expt. Sta. Bull. 492, Utah State Univ., Logan. 94 pp.